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ROADWAY IMPROVEMENTS STUDY

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COMPENDIUM OF TECHNICAL MEMORANDUMS

1.1

SYNOPSIS OF FORT POINT CHANNEL AREA STUDIES AND DATA

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FORT POINT CHANNEL AREA ACCIDENT HISTORY INVESTIGATIONS

2.1

METHODOLOGY FOR FORT POINT CHANNEL AREA YEAR 2010 TRAFFIC PROJECTIONS

2.2

IDENTIFICATION AND EVALUATION OF FORT POINT CHANNEL ROADWAY IMPROVEMENT OPTIONS

MAY 1989

FAY, SPOFFORD & THORNDIKE, INC. ENGINEERS

Boston

Raymond L. Flynn, Mayor

May 5, 1989

To Whom it May Concern:

The Boston Transportation Department is pleased to transmit four of the Technical Memoranda being prepared for the Fort Point Channel/South Boston Roadways Improvement Study funded under a State Public Works Economic Development (PWED) grant for agency review. They are:

1.1 - Synopsis of Fort Point Channel Area Studies

1.2 - Fort Point Channel Area Accident History Investigations

2.1 - Methodology for Fort Point Channel Area 2010 Traffic Projections

2.2 - Indentification and Evaluation of Fort Point Channel Roadway Improvement Options

With your cooperation, it is expected that the study will produce a consensus local roadway system for the Fort Point Channel area that meets transportation objectives for the area, is supportive of land use and urban design objectives and is consistent with the myriad of public and private investments that are being undertaken in the area.

In particular, we direct your attention to the Technical Memorandum 2.2 Summary of Findings, which summarizes the results of the traffic sensitivity comparisons of local roadway options which have been reviewed to date.

We will be calling you in the very near future to set up a meeting to discuss the status of this study and the next steps we will be undertaking to better define the local street grid pattern in the Fort Point Channel/South Boston area.

Very truly yours,

Andrew J. McClurg
Project Manager
Boston Transportation Department

cc: R. Garver, Boston Redevelopment Authority (2 sets)
W. Twomey, Massachusetts Department of Public Works (2 sets)
J. Aiello, Massachusetts Bay Transportation Authority (2 sets)
M. SchwartzLloyd, Economic Development and Industrial Corporation (2 sets)
R. W. Kelley, Massport Authority (2 sets)

Richard A. Dimino, Commissioner, Transportation Department
City of Boston/City Hall Square/Boston, MA 02201

BOSTON
TRANSPORTATION
DEPARTMENT

TECHNICAL MEMORANDUM 1.1

SYNOPSIS OF FORT POINT CHANNEL AREA STUDIES AND DATA

INTRODUCTION

The purpose of this memorandum is to present in concise form a description of studies of the Fort Point Channel/South Boston area completed since 1980, and of those known to be in progress.

The studies described include major transportation studies and Environmental Impact Reports which may affect current local roadway planning efforts.

The synopsis for each study includes the

1. Name of client (agency or private firm)
2. The firm conducting the study
3. The date of the study
4. A general description of the scope of the study
5. The key products of the study
6. A summary of recommended transportation/infrastructure improvements
7. A list of the usable (relevant) data
8. The current status of the study.

These synopses have been prepared to provide the Boston Transportation Department with a convenient reference for ongoing planning and coordination in the Fort Point Channel area.

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SYNOPSES OF MAJOR STUDIES 1988-1980

Third Harbor Tunnel, Interstate 90/Central Artery, Interstate 93 Final Environmental Impact Report - August 1985.

PUBLIC SECTOR:

Northern Ave. Bridges Study - BRA: May 1988

Boston Marine Industrial Park Development Study - (Draft) EDIC - February 1988

Appraisal Report of the Boston Marine Industrial Park - Sections A & B July 1987

South Boston Neighborhood Transportation Program - City of Boston - (Draft) December 1987

South Boston Bypass Road - BRA - August 1987

South Boston Piers/Fort Point Channel Area Transit Feasibility Study - MBTA June 1987

South Boston Land Use Inventory - Massport: June 1986

Final Environmental Impact Report - Building 114 Renovation - EDIC: February 1983

Final Environmental Impact Report - Commonwealth Pier Five - Massport: September 1982

Seaport Access System - BRA/Massport June 1980

Northern Ave. Bridge Replacement Study - BRA/Massport - January 1980

PRIVATE SECTOR:

Physical Change and Programming in and around the Fort Point Channel - Greater Boston Chamber of Commerce: July 1988

South Boston Truck Access Study - Boston Shipping Association 1987

Fan Pier/Pier Four Developments Environmental Impact Report - HBC Associates/Boston Mariner Co. November 1986

Final Environmental Impact Report: Coal Conversion Project - New Boston Station - Boston Edison - May 1984.

EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS - MEPA REPORTS

EOEA#	PROPONENT/TITLE	DATE
6956	MWRA - CSO Facilities Plan EIR '88	
	MWRA - Water Transportation Facility Plan-Vol. 5	FEIR '87
6363	EDIC - Rehab Pier 10	ENF '87
6164	Boston Freight Terminal - Heliport	ENF '86
6029	Boston Harbor Industrial Development Reserved Channel Park	ENF '86
5988	Toyota Motors - Facility	ENF '86
5932	Massport - Subaru - Operations Shop	ENF '86
5891	MDC - Pleasure Bay Boat House	ENF '86
5713	BOSCOM Partners/World Trade Center	ENF '85
5615	Bay State Spray - Boston Water Shuttle	ENF '85
5489	VII Corp/Pier & Marina	ENF '85
5383	Massport - Cruise Ship Terminal	ENF '85
5322	Coastal Cement/Storage Terminal	ENF '84
5267	DEM - South Boston Yacht Club	EIR '84
4907	Puritan Foundry/Transfer Station	EIR '83
4544	Reserved Channel Marina, Inc.	EIR '82
4470	Boston Edison - "L" St Station	ENF '82
4462	Massport - Relocation	ENF '82
4458	MDC - Beach Restoration	ENF '82
4456	MDC - Maritime Work	ENF '82
4133	Massport - Commonwealth Pier V	EIR '82
4056	Massport - Castle Island Dredging Container Port	ENF '81

BOSTON METROPOLITAN PLANNING ORGANIZATION (DRAFT)

TRANSPORTATION IMPROVEMENT PROGRAM 1989 - 1993

AGENCY	TITLE	% DESIGN	CON.COST/ELEMENT
MDPW	Dorchester Ave	0	$ 200,000
	Bridge		Future
MDPW	Northern Ave	0	$5,000,000
	Connecting Roads		2-5 year
MDPW	Pier Access Road	0	$2,900,000
			2-5 year
MDPW	Broadway	0	$2,400,000
	Bridge		2-5 year
MDPW	Congress Street	0	$3,000,000
	Bridge		2-5 year
MDPW	Northern Ave Bridge		$5,955,000
	Substructure (B-16-184)		Annual
MDPW	Northern Ave	0	$17,500,000
	B-16-184 - Relocation		Annual
MDPW	Summer St/FPC	0	$1,000,000
	B-16-31		2-5 year
MDPW	Summer St/A St	0	$1,000,000
	B-16-124		2-5 year
MDPW	Summer St/B St	0	$1,000,000
	B-16-231		2-5 year
MDPW	Summer St/C St	0	$1,000,000
	B-16-361		2-5 year

ADDITIONAL SOURCE MATERIALS FOR POTENTIAL PROJECTS

BOSTON REDEVELOPMENT AUTHORITY

- Fort Point Channel District Study - For BRA by David Dixon Associates
- U. S. Postal Exchange Redevelopment
- McCourt Property Master Planning - For McCourt Co. by the Architects Collaborative
- Children's Museum Park Development
- Boston Fish Pier 6 -
- Boston Wharf Company
- Pappas Development

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: Third Harbor Tunnel, Interstate 90/Central Artery, Interstate 93, Boston, MA, Final Environmental Impact Report, August 1985.

STUDY PREPARED FOR: State/submitted pursuant to 42 U.S.C. 4332(2)(c) and 49 U.S.C. 303

STUDY PREPARED BY: U.S. Department of Transportation, Federal Highway Administration, and Massachusetts Department of Public Works

GENERAL DESCRIPTION:

The study was conducted to describe and evaluate the Commonwealth's preferred alternative for the proposed construction of Central Artery/Third Harbor Tunnel. The preferred alternative would provide an increased highway capacity across the Boston Harbor via the Third Harbor Tunnel, linking the Massachusetts Turnpike/Central Artery interchange in Boston with Bird's Island Flats, Logan Airport, and Route 1A in East Boston, as well as increase the capacity of the (depressed) Central Artery.

KEY PRODUCTS:

- Description of the preferred alternative (Third Harbor Tunnel/depression of Central Artery).
- Access improvements described to South Boston Waterfront area.
- Description of travel time savings.
- Improvement to capacity of highway network (reduced congestion).
- Traffic service and access improvements to Logan Airport.
- Preferred alternative compared to no-build alternative (p. 171-226).
- Seaport Access Road description.
- Area land use proposals and likely patterns.
- Description of roadway scenario in South Boston in the build scenario (p. 217).

LISTING OF USABLE DATA:

- Average weekday daily traffic counts for area roads, including South Boston residential streets, for years 1982, 1990, 2010 (p. 56).
- Level of Service for area highway facilities in the AM peak and PM peak periods.
- Level of Service for local streets and intersections.
- 15 intersections analyzed in South Boston, five with an LOS of E or F in the AM, and four with and LOS of F in the PM (p. 59).
- Table depicting peak hour traffic volumes, v/c ratios, operating speeds, levels of service for all area transportation facilities, years of 1982, 1995, and 2010 were projected.
- Level of Service of roadway systems comparing no-build to build scenario (pp. 184-195).
- Level of Service comparisons, between no-build and build scenarios, of South Boston intersections (p. 197).
- 17.6 million fewer person travel hours with construction.
- Decrease in the region's carbon monoxide (CO) and non-methane hydrocarbons (NMHC) emissions for the area.
- Seaport Access Road design and plans for construction, through specific parcels from the Fort Point Channel to the Commonwealth Flats area.
- Traffic counts depicting projected increase of traffic on Congress Street at the Fort Point Channel due to its connection to the Seaport Access Road alignment.
- Cross Harbor capacity (east-west) will increase by Third Harbor Construction through South Boston.

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

Many assumptions concerning the possible improvement to the highway network system as well as to the local street system have been described in this particular study. The preferred alternative proposes a depression of the Central Artery with a connection to the Third Harbor Tunnel (proposed to be constructed) via the Seaport Access Road through South Boston. The main construction can be summarized in the following manner:

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS: (Cont.)

- The development of a special purpose, two-lane, two-way bus/high occupancy vehicle (HOV) roadway located between the northbound and southbound Central Artery roadways.

- Bus ramps to and from the Third Harbor Tunnel.

- A tunnel (four lanes) passes under the Fort Point Channel into South Boston from the Central Artery merging into the Seaport Access Road leading to the Third Harbor Tunnel (passing opposite of the Gillette building, and the west edge of the Fort Point Channel).

- The Seaport Access Tunnel crosses the South End of the Fort Point Channel in a two-way, four-lane configuration (plus weaving lanes), leading to a toll plaza in the Commonwealth Flats area.

- The Seaport Access Road curves north after the toll plaza, passing through the existing Boston Marine Industrial Park as it reaches the Boston Harbor.

- A tunnel will be constructed at this entry point, crossing underneath the Boston Harbor towards Logan Airport.

Several other project elements must be mentioned that will be constructed/developed in some way in conjunction with the Central Artery and Third Harbor Tunnel construction, namely:

- Construction of a direct connection from Summer Street to the Seaport Access Road, to better service truck activity.

- An access road to the Seaport Access Road, in the vicinity of Congress Street and Northern Avenue (near Pier 4) areas.

- Construction of a two-way service road at Summer Street and Northern Avenue near the BMIP.

- Summer Street, Viaduct Street, and B Street will be extended.

- Relocation of Dorchester Avenue - provide a ramp to new Dorchester Avenue, connecting to Summer Street which would provide improved access from south to north South Boston.

- Ventilation building construction in three sites, in the vicinity of A Street, B and Viaduct Streets, and the BMIP near C Street.

STATUS AND MAJOR CHANGES AS OF SEPTEMBER 1988:

The Draft Supplementary EIS is expected to be published in Spring 1989. Other supplementary studies are ongoing by Bechtel/Parsons Brinckerhoff under the Massachusetts Department of Public Works. They include the Seaport Access Road, Connector Roads and South Bay Interchange and new Northern Avenue Bridge design. These studies are outside the scope of the PWED study.

GRAPHICS (Map of Area):

- Project area map

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: Northern Ave. Bridges Study (May 1988)

STUDY PREPARED FOR: BRA

STUDY PREPARED BY: Todd Lee/Clark/Rozas Asso. Inc.

GENERAL DESCRIPTION:

Description of alternatives for existing Northern Ave Bridge and proposals for new bridge - and amenities.
Existing Bridge Options - From demolition to complete restoration - costs - $2.4 m to $8.m.

KEY PRODUCTS:

Urban design criteria for new bridge and associated Harborwalk and parks

LISTING OF USABLE DATA:

Data on existing bridge options and costs
P.11 - 12 & P.11 - 13.
New bridge - FHWA & BRA Criteria

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

- Recommendation for re-use of existing Northern Ave Bridge - open position and accessible to pedestrians.
- Design recommendations for new bridge.
- Integration of Harborwalk into bridge plan.

STATUS AND MAJOR CHANGES AS OF: June 1988

MDPW needs
- Coast Guard permit
- FHWA approval of sub structure
- money for super structure

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: Boston Marine Industrial Park Development Study, February 5, 1988 (Draft)

STUDY PREPARED FOR: Economic Development and Industrial Corporation of Boston

STUDY PREPARED BY: Arrowstreet, Inc. and subconsultants

GENERAL DESCRIPTION:

The study was conducted with the focus to increase the number of quality blue collar jobs for residents of Boston in the Boston Marine Industrial Park (BMIP). Emphasis was placed on attracting industries to the BMIP which need this type of location (waterfront) and which would generate a fair amount of blue collar jobs.

KEY PRODUCTS:

- Development strategies were devised with analysis identifying potential growth industries, an analysis of the financial feasibility to accommodate such industries, and then the financial strategies for development are outlined for each alternative scheme developed.
- Framework or the description of a development strategy was outlined.
- Developing the BMIP in a coherent fashion, keeping within a prescribed policy of shaping the Park's industrial space and tenant choice.

LISTING OF USABLE DATA:

- 150 tenant companies employ 3,000 people: 40% Boston residents;
- 191 acres of land, with over 3.2 million s.f. space.
- Added development of 1.4-2.0 million s.f. space.
- Two drydocks in BMIP, one is the second largest in country;
- Maps depicting BMIP alternate building scenarios (preliminary scenario dimensions).
- Traffic projections to the BMIP Gateways (from Summer Street, and Northern Avenue).
- Projected growth industries and potential demand for space (to 1993).

LISTING OF USABLE DATA: (Cont.)

- Projections on needed parking in the BMIP for each scheme developed (five schemes).
- Trip generation and distribution projections described for the BMIP.
- Transportation map showing the recommended circulation improvements for the BMIP.
- Infrastructure improvement needs.

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

Projections of BMIP needs for each of the three scenarios are mentioned in detail. There are two entrances to BMIP, one along Northern Avenue and the other along Summer Street, both will be effected due to future development in the area. Ramps which put traffic from the Third Harbor Tunnel onto Northern Avenue near the BMIP entrance have been proposed, as well as a fully directional interchange planned to intersect with Summer Street in the vicinity of D Street. Higher traffic volumes are expected in the area due to the Seaport Access Road and Tunnel construction. A third entrance is expected about 800 feet to the west of Kennedy Avenue. Kennedy Avenue will be expanded in width, two four-lane side streets (new) are proposed within the park, and the widening of Drydock Avenue and Harbor Streets is proposed.

STATUS AND MAJOR CHANGES AS OF SEPTEMBER 1988:

Draft final report complete.

GRAPHICS (Map of Area):

- map showing Boston Marine Industrial Park

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: Appraisal Report of the Boston Marine Industrial Park: Section A - Letter of Transmittal Through Calculation - Comparable Data, July 1, 1987

STUDY PREPARED FOR: The Economic Development and Industrial Corporation of Boston

STUDY PREPARED BY: R.M Bradley and Co., Inc

GENERAL DESCRIPTION:

The report is an appraisal of the Boston Marine Industrial Park, which estimated the fair market value of the land and buildings owned by EDIC of Boston, as of July 1, 1987.

KEY PRODUCTS:

- 26 parcels of land within the BMIP are thoroughly discussed.
- Comparisons of these 26 parcels to other industrial land sites throughout the Boston Metropolitan region.

LISTING OF USABLE DATA:

- Zoning information and land use restrictions are discussed per parcel.
- 26 parcels are identified, with information gathered concerning infrastructure layouts, land value, tax rates, addresses, land and building areas per parcel, tenants, transportation services to the BMIP, Streets and Roadways, etc.
- Parking requirements are discussed throughout the BMIP, especially the restricted parking district.
- A listing of comparable industrial land sites throughout the Boston Metropolitan area.
- Listed the routes of public transportation into the park (two routes, $.50 fee, running from 5:56 AM - 6:15 PM).

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

A description of infrastructure layouts from storm drains to sanitary sewer systems was given, detailing recent improvements and recent history of current infrastructure situations. The rail service entering the BMIP has gone through some minor repairs (by the EDIC-owner). Massport has spent some money in repairs as well. Since 1983, 90% of the BMIP's roads have been rehabilitated in some way. In 1986, most of the roads that were not included in the initial rehabilitation project were reconstructed or rehabilitated.

No future measures were discussed in any length concerning future recommended transportation improvements to the BMIP.

GRAPHICS (Map of Area):

- Total land square footage, including building footprint

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: Appraisal Report of the Boston Marine Industrial Park: Section B - Descriptions and Valuations Through Addenda, July 1, 1987

STUDY PREPARED FOR: The Economic Development and Industrial Corporation of Boston

STUDY PREPARED BY: R.M. Bradley and Company, Inc.

GENERAL DESCRIPTION:

The appraisal describes each parcel located within the BMIP, as well as a valuation of each parcel.

KEY PRODUCTS:

- Each parcel is described in detail.
- Renovations proposed for future are included when applicable.
- Future projected occupancy rates for buildings (with tenants), and parking.
- Master Parking Plan for the area is detailed.

LISTING OF USABLE DATA:

- Yard improvements, such as repaving of parking lots, relighting, fencing additions, and underground garage construction per parcel are detailed.
- Possible new development, due to tenants for redevelopment to more intensive uses, thus more employees housed.
- Possible relocation of tenants for redevelopment to more intensive uses, thus more employees housed.
- Parking space counts for two area parcels (Lot E, Lot F).

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

The construction of the Third Harbor Tunnel will displace the General Ship Corporation, currently leasing Dry Dock #4 on Parcel V. Possible repavement of some of the area parcels would lead to newly striped (counted) parking areas.

GRAPHICS (Map of Area):

- Total land square footage, including building footprint

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: Draft of South Boston Neighborhood Transportation Program: December, 1987

STUDY PREPARED FOR: City of Boston

STUDY PREPARED BY: Boston Transportation Department/BSC Engineering/Cambridge Systematics, Inc.

GENERAL DESCRIPTION:

The study addressed a variety of existing transportation problems in South Boston and propose several short-term and moderately priced traffic and transportation related infrastructure improvements.

KEY PRODUCTS:

LISTING OF USABLE DATA:

- Listing of high volume commuter routes to/from South Boston and a description of their peak hour and daily operating conditions.
- 1986/1987 peak hour and daily traffic volumes in South Boston
- Daily and peak hour operating conditions on the Southeast Expressway
- Assessment of traffic circulation impacts from several selected roadway circulation changes.
- Implementation phasing of proposed infrastructure improvements.

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

Roadway Geometry

- Widen Southeast Expressway Frontage Road from DPW yard to Fourth Street
- Narrow Day Boulevard from Kosciuszko Circle to Farragut Road

Roadway Channelization

- A Street (two lanes north-bound, one lane southbound) from Dorchester Avenue to Second Street bound, one lane southbound
- Dorchester Street (two lanes northbound only) from Broadway to First Street
- Dorchester Avenue (Fourth Street to Conrail bridge) shift centerline west to provide two northbound lanes
- Dorchester Avenue (Second Street to Summer Street) extend public roadway during AM peak period

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS: (Cont.)

Left Turn Restrictions-Day Boulevard

- Close-off island openings at Mercer Street, Old Harbor Street, G Street, I Street and N Street

Signals

- New Signal at Day Boulevard and Columbus Park
- New Signal at Day Boulevard and O Street
- New Signal at Day Boulevard and Farragut Road
- Coordinate Signals at A Street (Dorchester Avenue to Second Street)
- Coordinate Signals at Dorchester Avenue (A Street to Broadway)

Circulation Changes

o E Street	Northbound-Old Colony Ave. to Broadway Southbound-First Street to Broadway
o F Street	Southbound-Broadway to Seventh Street
o Old Harbor Street	Southbound only
o West Seventh Street	Northbound-C Street to Dorchester Avenue
o H Street	Northbound-Broadway to Emerson Street
o I Street	Southbound-Third Street to Broadway
o K Street	Northbound-Third Street to Broadway
o M Street	Northbound-Broadway to First Street

Parking

- Enforcement of No Parking on Dorchester Avenue (A Street to Old Colony Avenue)
- Remove Parking on A Street (Dorchester Avenue to Second Street)

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: South Boston Bypass Road; August, 1987

STUDY PREPARED FOR: Boston Redevelopment Authority

STUDY PREPARED BY: Fay, Spofford & Thorndike, Inc.,

GENERAL DESCRIPTION:

The study was conducted to evaluate alternative schemes for a truck access road to serve several private and public development projects in South Boston. The proposed road could possibly facilitate about short and long term non-construction related trucking activities in South Boston also.

KEY PRODUCTS:

- Operational analysis and coat estimates of 15 bypass and scheme.

LISTING OF USABLE DATA:

- Map of the existing signed truck route in South Boston
- Listing of land use between Southhampton Street and Northern Avenue
- Bridge inventory rating
- Operational aspects, mapping, and cost estimates for 15 bypass road scheme

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

- All 15 schemes for the proposed bypass road use a portion of the Conrail Right-of-Way. The schemes involve connecting Northern Avenue wit the First Street, Dorchester Avenue or the Southhampton Street areas.

STATUS AND MAJOR CHANGES The Boston Redevelopment Authority is currently reviewing plans for the proposed South Boston bypass road.

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: South Boston Piers/Fort Channel Area Transit Feasibility Study, June 1987

STUDY PREPARED FOR: Massachusetts Bay Transportation Authority

STUDY PREPARED BY: URS Corporation plus subconsultants

GENERAL DESCRIPTION:

The study was conducted to analyze future transit alternatives that would support the extensive new development (projected to 1995 and beyond) in the Fort Point pier area. The study emphasizes improved public transportation to support the new development, with the objective of meeting a transit mode share of 60 percent for the area (as achieved in downtown Boston). The report lists a limited set of transit alternatives (which could serve the area), and discusses the financial feasibility of each alternative.

KEY PRODUCTS:

- Description of key public transportation alternatives (identification/evaluation).
- Projected land uses (based on CSI/BRA inventories).
- Travel demand analysis, including forecast mode shares by alternative.
- Identification of potential financing strategies.

LISTING OF USABLE DATA:

- Projected land use data to 1995/2010.
- Trip generation and distribution information for the South Boston area.
- Mode split analysis by alternative.
- Maps of the alternatives.
- Architectural depictions of alternatives after and before future construction.

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

Transit alternatives selected for Phase II consist of: conventional surface buses directed from South Boston to South Station and Government Center; elevated People Movers (1 and 2) from South Boston to South Station and from South Boston to Aquarium Station, Haymarket, and North Station; an underground People Mover from South Boston either to South Station and Boylston/Chinatown-Essex or to Washington Station; guided bus (either by tunnel or on the surface) from South Boston to South Station, New England Medical Center Station, and Boylston Station; and the Red Line relocation between South Station and Broadway Station (with two possible alignments - the South Boston Conrail Cut or the Seaport Access Road).

STATUS AND MAJOR CHANGES AS OF SEPTEMBER 1988:

Phase II Alternatives Analysis/Draft EIS

GRAPHICS (Map of Area):

- Study alternatives graphic

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: South Boston Land Use Inventory, June 1986

STUDY PREPARED FOR: Massport Chart Project

STUDY PREPARED BY: Kaiser Engineering, Inc./S.O.M./Vollmer Associates/ Whitney/TRA/Communita /CO&A

GENERAL DESCRIPTION:

The study includes an inventory of land use and ownership patterns for the northern, industrial portion of South Boston by means of examining each parcel within the study area.

KEY PRODUCTS:

- o A land use strategy for all parcels in the study area.
- o Inventory parcelization maps.
- o Data sheets detailing data on each of the parcels (on an individual basis).
- o Alternatives for future transportation plans for South Boston are detailed.

LISTING OF USABLE DATA:

- o Number of square feet of space per parcel (projected).
- o Office, retail, residential, hotel, industrial land uses are depicted for each parcel in terms of square feet.
- o Vehicle-trip generation rates were generated by land use (listed above).
- o Trip assignment patterns were derived from the Fan Pier DEIR.
- o Total volume counts were projected for five intersections (with build and no-build scenarios (THT)).
- o Parking requirements were generated from the traffic forecasts performed in this study.
- o Generated PM peak hour travel demand for THT ramp capacity.

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

Three Alternatives to Local Street Traffic:

Alternate A

- Seaport Access Road located in alignment recommended in Chart 1A.
- New Local Grid Street Pattern to north of Seaport Access Road: two new streets going east-west (connecting areas to west/provide site access), four streets going north-south (B Street, Viaduct Street, D Street (extended), Trilling Way (extended)).
- Direct truck access to BMIP.
- Residual parcel developed as a (proposed) electric substation on Summer Street.

Alternate B

- Seaport Access Road moved south, maximizes development area near Northern Avenue.
- Grid north of Seaport Access Road: two new east-west streets constructed, same four streets going north-south (as in Alternative A), and connection of east-west streets to Haul Road (future administration building service road).
- New development parcel created north of Access Road (near BMIP).
- Direct truck access to BMIP.

Alternate C

- Seaport Access Road aligned to bisect Commonwealth Flats (provides greatest developable land).
- Same grid system to north of Seaport Access Road as Alternate A.
- Same residual parcel as Alternative A.
- Direct truck access to BMIP.

GRAPHICS (Map of Area):

- South Boston Area Land Use Study Parcelization Map

South Boston Land Use Inventory

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: Final Environmental Impact Report: Building 114 Renovation, Boston Army Base, Boston, Massachusetts, February 1983

STUDY PREPARED FOR: EDIC/Boston

STUDY PREPARED BY: Vanasse/Hangen Associates, Inc.

GENERAL DESCRIPTION:

The study was conducted for the proposed renovation of Building 114 at the Boston Army Base. An industrial use was proposed, specifically garment or textile industrial use. The building is located on the property of the Boston Army Base, on Boston Harbor, adjacent to the BMIP.

KEY PRODUCTS:

- Transportation measures/impacts described for proposed development.
- Air quality and noise impacts were described.
- Necessary utility improvements/redevelopment were described.
- Public access to the facility was detailed.

LISTING OF USABLE DATA:

- Survey concerning geometric conditions of key local arterials/streets.
- 24-hour mechanical traffic counts were taken on 10 area roads (p.47).
- Peak hour manual turning movements and classification counts were taken at 17 sites in South Boston (pp. 50-51).
- Speed measurements were taken at nine locations, utilizing the "floating car method" (p. 58).
- AM and PM peak hour bus ridership counts were established, with capacity rates for the two existing bus routes.
- Trip generation analysis was performed concerning building 114 redevelopment (p.79).
- Survey of 15 garment industries determined travel and parking characteristics of the proposed redevelopment.

LISTING OF USABLE DATA: (Cont.)

- Origin locations of garment workers were derived (p. 81).
- A garment center employee auto trip generation was formulated (p. 82).
- Projected visitor trips to facility.
- Trip distribution/traffic patterns for arrival and departure were depicted (p. 90).
- Projected 1987 traffic volumes.
- Level of service summary of 15 area intersections (p. 102)

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

Atlantic Avenue and Summer Street intersection improvements were suggested for development, namely a minor alignment of Summer Street, along with the implementation of an interconnected signal. The Broadway, Dorchester Avenue, Greenbaum Street intersection upgrade, including the removal of an MBTA kiosk, with the new construction of subway portals in the vicinity of the intersection.

Improvements to the Reserved Channel Bridge is Proposed for redevelopment/construction, along with BMIP entrance improvements on the Summer Street side. A new experimental bus route between Chinatown and the Army base was developed by the MBTA, along with shuttle services providing transportation for local residents working in the development. Parking lot construction and expansion will also take place to accommodate visitors and employees.

STATUS AND MAJOR CHANGES AS OF SEPTEMBER 1988

Building 114 went through the proposed renovations, and is now a garment manufacturing facility.

GRAPHICS (Map of Area):

- Project site and vicinity
- Traffic analysis study area

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: Commonwealth Pier Five Redevelopment Final EIR; September 1982

STUDY PREPARED FOR: Massachusetts Port Authority

STUDY PREPARED BY: Skidmore, Owings & Merrill/Vanasse Hangen Associates/ Tech Environmental

GENERAL DESCRIPTION

Commonwealth Pier: 850,000 sq. ft. proposed for redevelopment. Report identifies 3 alternatives: (1): No-Build 300,000 SF of warehouse/terminal and exhibition hall. (2) Preliminary Development Concept-830,000 SF of Exhibit Hall/office, hotel & restaurant space and 1,000 parking spaces. (3) BOSCOM alternative-1,040,000 SF of Exhibition/Conference, Hotel, Trademart & restaurant space and 520 parking spaces.

KEY PRODUCTS:

- Final Environmental Impact Report, dated September 1982
- Transportation Analysis
- Air Quality
- Maritime Activities Summary
- Utilities

LISTING OF USABLE DATA:

- Preliminary Development Concept and BOSCOM Alternative Trip generations
- Preliminary Development Concept and BOSCOM Alternative Trip origins
- Mobility Deficiencies of roadways in South Boston study area
- Capacity Analysis of selected S. Boston intersections
- Development's Traffic impact on Central Artery

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

- Shuttle bus service between BOSCOM and major hotels in Boston will be provided by Massport and FMR Properties.

- Provide preferential parking for carpoolers, and segregate parking areas for cruise ship patrons, hotel quests, and restaurant visitors.

- Improvements to the Congress Street eastbound approach to Atlantic Avenue with the addition of a second left-turn lane.

- Direct bus service between Logan Airport, downtown, and Commonwealth Pier.

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:(Cont.)

- o Water taxi service between Logan Airport, Commonwealth Pie and Long Wharf.
- o Elimination of all on-street parking along Atlantic Avenue from Summer Street to Northern Avenue.
- o Improvements in pedestrian amenities and streetscape along Northern Avenue.

STATUS AND MAJOR CHANGES AS OF April 88: The BOSCOM Alternative was selected. Rehabilitation of existing structures is complete but construction at hotel has not yet begun.

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: Seaport Access System; June, 1980

STUDY PREPARED FOR: Boston Redevelopment Authority/Massachusetts Port Authority

STUDY PREPARED BY: Fay, Spofford & Thorndike, Inc./Wallace, Floyd, Ellenzweig, Moore, Inc.

GENERAL DESCRIPTION:

This study was conducted to identify improvements to seaport access in the South Boston area. Specifically, the study examines several option to improve truck circulation and access to and from South Boston.

KEY PRODUCTS:

- Operational analyses and traffic impacts of 5 South Boston access schemes.

LISTING OF USABLE DATA:

- List of potential development by property owners
- Limiting of existing and proposed land uses, and projected truck and automobile trips to specific land uses by the year 2000
- Summary of independent traffic system improvements and their estimated costs
- Planning and design concerns related to road alternatives and anticipated development

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

A variety of small-scale infrastructure improvements coupled with a few large-scale infrastructure improvements are incorporated in a variety of ways in the 5 proposed alternatives.

STATUS AND MAJOR CHANGES Subsequently; Fay, Spofford & Thorndike, Inc. conducted a South Boston Bypass Road study to evaluate several alternatives for using the Conrail Right-of-Way for a truck access road.

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: Northern Avenue Bridge Replacement Study; January, 1980

STUDY PREPARED FOR: Boston Redevelopment Authority/Massachusetts Port Authority

STUDY PREPARED BY: Fay, Spofford & Thorndike, Inc.,/Wallace, Floyd, Ellenzweig, Moore, Inc.

GENERAL DESCRIPTION:

The report was prepared as a supplement to previous studies to develop a design scheme for a new Northern Avenue Bridge over Fort Point Channel.

KEY PRODUCTS:

- Preliminary design concepts and alignment of Northern Avenue Replacement bridge.

LISTING OF USABLE DATA:

- Plan and elevation of the proposed Northern Avenue replacement bridge
- Estimated cost of bridge replacement
- Vertical clearance of ocean vessels
- Proposed development of major land parcels in the Fort Point Channel area
- Short and long term environmental impact summary

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

- The relocated Northern Avenue Bridge would be located south of the existing bridge, the conjunction with the new bridge, relocated Northern Avenue would intersect with Atlantic Avenue to the and Sleeper Street to the west, and would continue west to its intersection with the proposed Seaport Access Road and then with B Street. The existing section of Northern Avenue between Sleeper Street and the proposed Seaport Access Road would remain in operation to access Fan Pier and other land uses.

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: Physical Change & Programming in and around the Fort Point Channel, July, 1988.

STUDY PREPARED FOR: Greater Boston Chamber of Commerce.

STUDY PREPARED BY: Fort Point Channel Project - M. David Lee, Chair

GENERAL DESCRIPTION

Substantial discussion of the district's needs, both short-term and long-term. Report divides area into: 1. FPC District, 2. FP Channel and Basins, 3. Visual Arts District.
Report emphasizes public access - especially pedestrian, and emphasis on water-related activities.

KEY PRODUCTS: Report and recommendations by an advisory committee with broad membership from state, city and private groups.

LISTING OF USABLE DATA: Good background and goals statement. Descriptions of existing conditions on both sides of the channel.
Short-term and long-term recommendations for each section - focussing on urban design and historical features, pedestrian access, safety and amenities, water - related activities - including industries. Connections with Harborwalk and South Station.

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

- Importance of CSO site and size.
- Open Dorchester Ave outbound (peak); parking on Dot Ave.
- Northern Ave. Bridge to Oliver Street.
- Open Dorchester Ave.
- T Broadway Station to Channel - pedestrian
- Post Office to Channel to Gillette etc. - pedestrian.
- Re-open Mt. Washington Ave - Pedestrians/Bridge, Harborwalk complete around Channel, street and sidewalk reconstruction, traffic signals, etc.

STATUS AND MAJOR CHANGES AS OF: September 1988

Advisory Committee is ongoing.

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: Fan Pier/Pier 4 Developments EIR; November, 1986

STUDY PREPARED FOR: HBC Associates/The Boston Mariner Company

STUDY PREPARED BY: Skidmore, Owings & Merrill/Vanasse Hangen Associates/
Tech Environmental/Wright brothers Facility, MIT/Jason M. Cortell and Associates, Inc./Parsons, Brickerhoff, Quade & Douglas

GENERAL DESCRIPTION

Fan Pier: 2.97 million square feet residential, retail, office and hotel space (9 buildings); 2500 parking space; marina with 80 ships and docking spaces; breakwater. Pier 4: 1.65 million square feet residential, general retail; offices and hotel space; 450 parking spaces; marina and water transportation dockage.

KEY PRODUCTS:

- o Final Environmental Impact Report, November, 1986.
- o Background Development Assumptions
- o Traffic and Parking
- o Air Quality
- o Wind

LISTING OF USABLE DATA:

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

- o Shuttle bus system connecting the Northern Avenue development area to South Station, Aquarium Station, Government Center, and other downtown transportation nodes.

- o Suburban express bus service to the project sites and the Northern Avenue development area.

- o If feasible, Water shuttle service to improve access between the sites and downtown public transportation nodes.

- o MBTA expand local bus service to commercial and industrial development areas in South Boston. Manage the available parking supply at the sites to allocate spaces for non-commuters and to create incentives for employee ridesharing and transit use.

  Maintain pedestrian access across the existing Northern Avenue Bridge.

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS: (Cont.)

- Adjust traffic signal timing at the intersection of Summer Street and Viaduct Street to reduce queuing delays for southbound traffic on Viaduct Street.

- Conversion of Atlantic Avenue south of Summer Street to one-way operation northbound.

- Adjust traffic signal timing at the intersection of Atlantic Avenue and Summer Street to reduce the Atlantic Avenue northbound queue length.

- Permanent structural stablizing fill (rip-rap) along failing seawalls with buckets. Confine the fill sites within silt curtains.

- Construct a new sanitary sewage collection system that allows for long-term development of the area.

- Provide and maintain grease traps which meet Title V Sanitary Code requirements in all restaurant kitchen facilities.

- A new low service water distribution line to supply the needs of the Fan Pier and Pier 4 Developments.

- Construct gas and oil separators with proper venting in storm drains to minimize discharge of these materials to the Harbor.

- Traffic control plans that maintain access along the portion of Northern Avenue adjacent to the sites and address the routing and timing of construction-related trips to avoid impacts on residential areas and congested city streets.

STATUS AND MAJOR CHANGES AS OF September 1988: No development scheduled.

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: South Boston Truck Access Study; December 22, 1987

STUDY PREPARED FOR: Boston Shipping Association/HBC Associates

STUDY PREPARED BY: Vanasse Hangen Brustlen, Inc.

GENERAL DESCRIPTION

The study was conducted to address concerns about impacts of the proposed Fan Pier and Pier 4 developments on landside access for waterborne commerce.

KEY PRODUCTS:

- o Truck Classification Counts
- o Truck Activity Survey
- o Proposed Access Action Plan

LISTING OF USABLE DATA:

- o Twelve hour and peak hour traffic counts and vehicle classification on selected South Boston Cordons.
- o Origin - Destination survey of truckers serving or located within the South Boston commercial area north of First Street.
- o Access improvements planned by the city and state.
- o Improvements suggested in travel survey.
- o Proposed truck access action plan.

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

Short-range
(0-2 years)

- o Construct temporary relief connector link between Summer Street and the existing Massport Haul Road
- o Construct temporary relief connector link between the Boston Marine Industrial Park and the existing Massport Haul Road
- o Repair/reconstruct the West 2nd Street Bridge
- o Make intersection and roadway improvements as proposed in the Fan Pier/Pier 4 Transportation Access Plan (TAP) for Atlantic/Summer, Atlantic/Congress, and Northern/D Street Extension

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS: (Cont.)

Mid-range
(2-5 years)

- o Relocate portion of new truck route to repaved Fargo Street
- o with a direct connection onto South Boston Construction Bypass Road as planned by the State.
- o Signalize the intersection of Summer Street/Fargo Street and coordinate/interconnect with the existing signal at Summer Street/BMIP Entrance.
- o Construct a new Cypher Street link as a southerly connection to the Bypass Road and extend it to A Street.
- o Advance construction of the Seaport Access Road Connector Streets between New Northern Avenue and Congress Street, plus the TAP improvements proposed at Atlantic/New Northern and along New Northern itself.

Long-range
(5+ years)

- o Extend the Bypass Road from its southerly terminals at West 2nd Street or Dorchester Avenue to the Southeast Expressway at Southampton Street.
- o Make intersection improvements as proposed in the TAP for Congress Street at the Seaport Access Road entrance and exit camps.
- o Consider an easterly extension of Cypher Street across the Reserved Channel as an exclusive east-west truck route.

STATUS AND MAJOR CHANGES AS OF_____:

SOUTH BOSTON - FORT POINT CHANNEL AREA

SYNOPSIS OF STUDY

TITLE: FEIR: Coal Conversion Project, New Boston Station, Units 1 and 2, May 1984

STUDY PREPARED FOR: Boston Edison Company

STUDY PREPARED BY: Stone and Webster Engineering Corporation

GENERAL DESCRIPTION:

The study was conducted to develop the Boston Edison Company's plan to convert the New Boston Station (located at 776 Summer Street in South Boston) from an oil-fired to a coal-fired facility, while retaining the ability to burn oil.

KEY PRODUCTS:

- Provides a detailed assessment of environmental impacts associated with ash transportation from the facility.
- Describes the project's transportation access routes.
- Describes possible future development in South Boston.
- Describes ash transportation by trucks, rail and barge.

LISTING OF USABLE DATA:

- Air quality levels derived, through the proposed conversion of the site.
- Truck access routes (for the ash) were described through field observations to and from the New Boston Station (p. E-6).
- Average daily traffic forecasts reflecting traffic volumes along truck access routes for 11-hour periods (E-7).
- Peak-hour traffic volumes were derived.
- 27 truckloads of ash per day will be removed once conversion has taken place: derived from the hours of 7 AM - 6 PM (p. E-8).
- 2.5 trucks per hour is the derived one-way frequency per hour (of loaded vehicles) (p. E-8).
- Estimated impact of ash trucks on average daily traffic (on 12 local streets) (p. E-18).
- One 5,000 ton barge estimated for every 7 to 11 days for ash removal.

SUMMARY OF RECOMMENDED TRANSPORTATION/INFRASTRUCTURE IMPROVEMENTS:

- The ash truck traffic on area streets will be reduced due to the barge usage in the Reserved Channel. Also, ash transportation by rail would require construction of an extended rail turnout into the New Boston Station, which would have to be built on MBTA property across from East First Street and Christopher Lee Park.

  Many other roadway improvements were mentioned, such as the construction of a new Northern Avenue bridge, which have been previously described in other studies in the South Boston area.

STATUS AND MAJOR CHANGES AS OF SEPTEMBER 1988:

The Department of Public Utilities squashed the project, due to the fact that it was not cost-effective.

GRAPHICS (Map of Area):

- Site vicinity and significant features
- Rail facilities and users
- 1987 roadway improvements

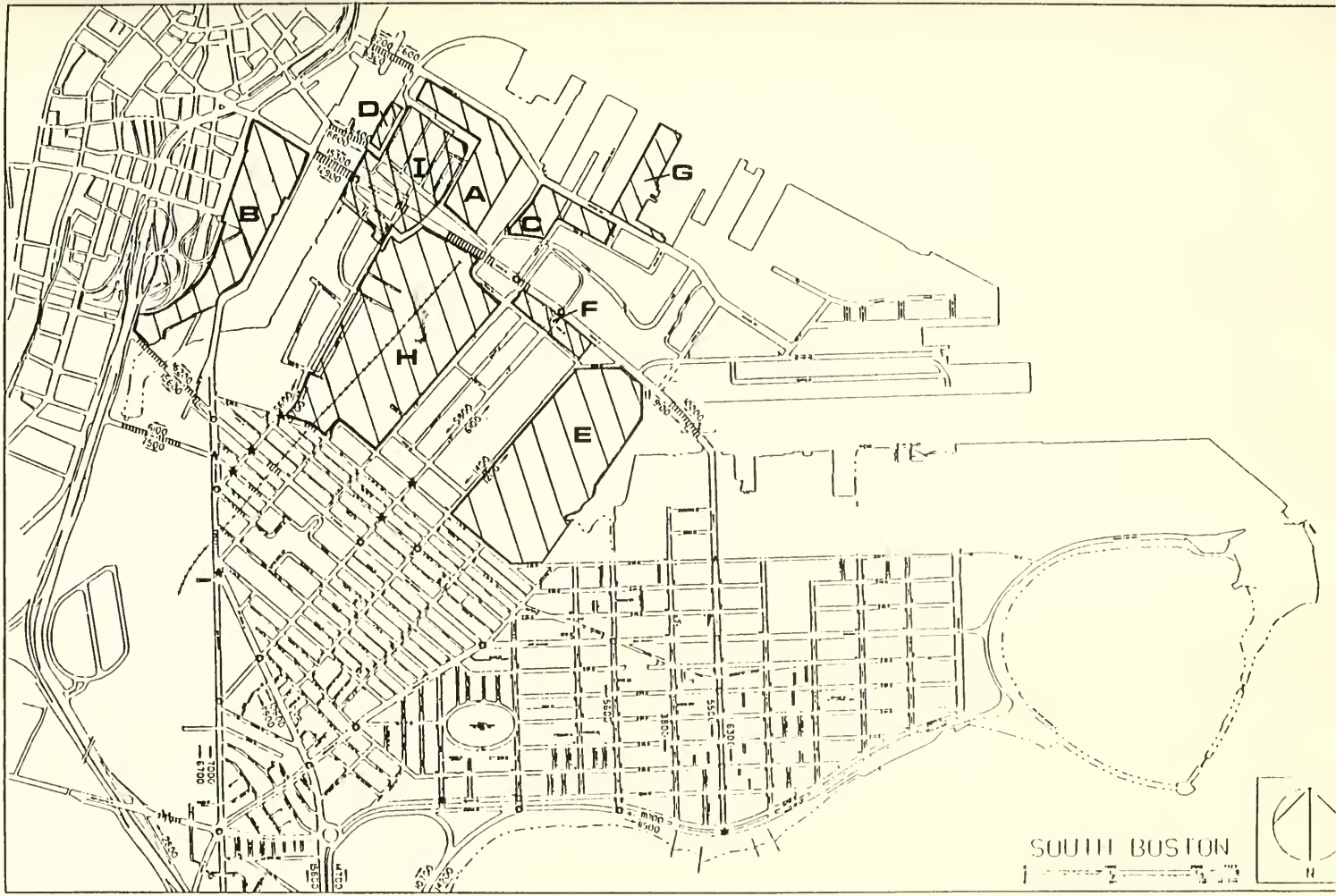
MAPS

POTENTIAL DEVELOPMENT PROJECTS

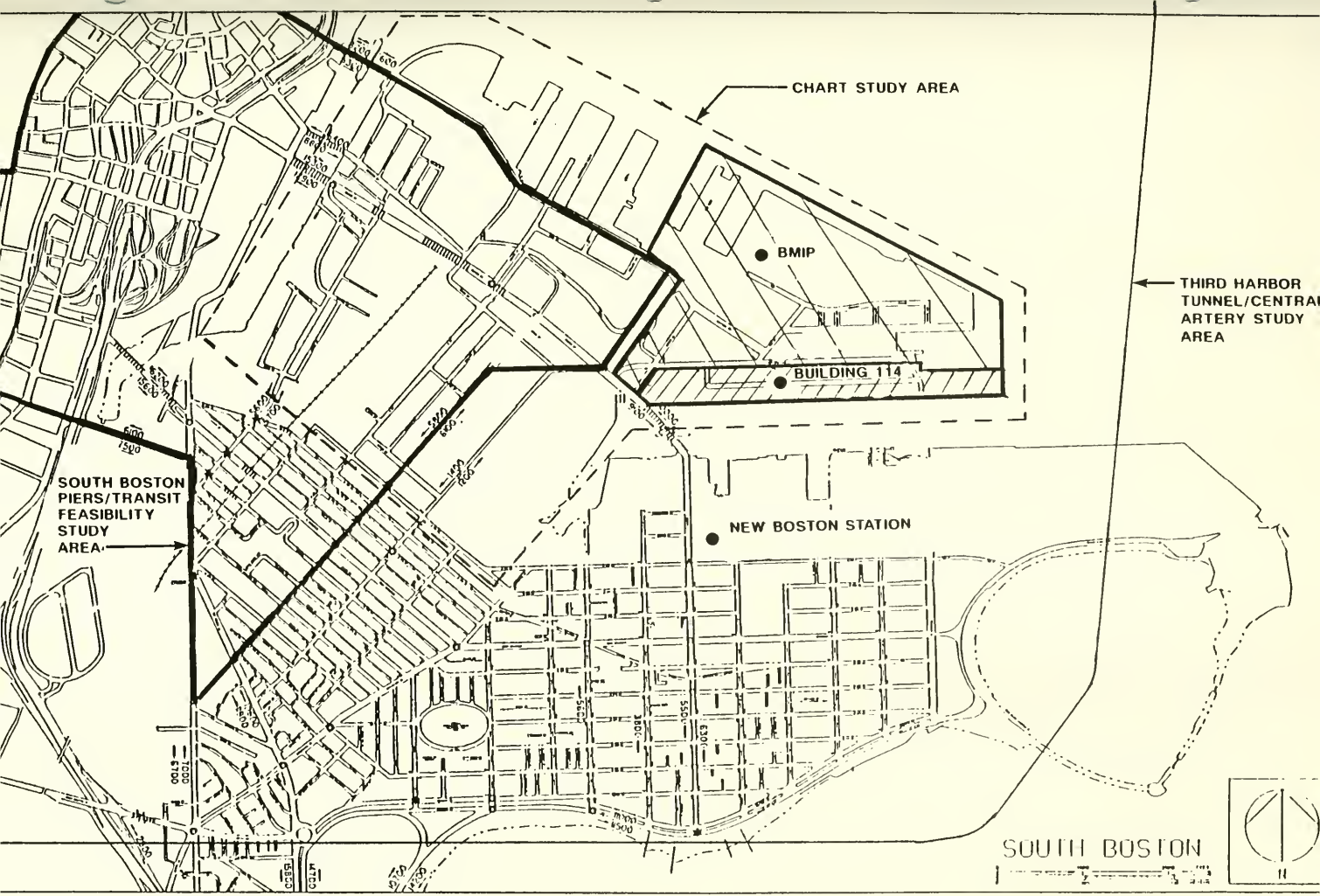
a. McCourt Property
b. U. S. Postal Exchange Redevelopment
c. Commonwealth Flats
d. Children's Museum
e. U. S. Naval Reservation (Subaru)
f. Pappas Property
g. Boston Fish Pier 6
h. Conrail Yards
i. Boston Wharf Co.

STUDY AREAS

MDPW Third Harbor Tunnel/Central Artery Study Area
Massport CHART Area
MBTA Boston Piers Transit Feasibility Area
Boston Marine Industrial Park
New Boston Edison Station



POTENTIAL DEVELOPMENT PROJECTS


CHART STUDY AREA
BMIP
BUILDING 114
THIRD HARBOR TUNNEL/CENTRAL ARTERY STUDY AREA
SOUTH BOSTON PIERS/TRANSIT FEASIBILITY STUDY AREA
NEW BOSTON STATION
SOUTH BOSTON

STUDY AREAS



FORT POINT CHANNEL/SOUTH BOSTON
ROADWAY IMPROVEMENTS STUDY

BOSTON
TRANSPORTATION
DEPARTMENT

TECHNICAL MEMORANDUM
1.2

FORT POINT CHANNEL
AREA ACCIDENT HISTORY INVESTIGATIONS

JANUARY 1989



FAY, SPOFFORD & THORNDIKE, INC. ENGINEERS

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I. INTRODUCTION

This is the second in a series of eight Technical Memoranda being prepared for the City of Boston Transportation Department under a Public Works Economic Development grant to address the planning issues associated with the Fort Point Channel/South Boston Roadway Improvements Study. Fay, Spofford & Thorndike, Inc. (FST) is the lead firm in a team of six consultants who are preparing this study. The other members of the Study Team include:

- Cambridge Systematics, Inc. - Computerized Traffic Forecasts
- The BSC Group - Base Mapping and Utilities
- Lozano, White and Associates, Inc. - Streetscape Issues
- David Dixon & Associates - Urban Design and Land Use Issues
- Facilities Data, Inc. - Traffic Data and Accident Studies

Facilities data, Inc., on behalf of the Study Team, prepared this Technical Memorandum document a recent three year period of accident data (1980, 1983, and 1984) in the Fort Point Channel Study area. The Massachusetts Department of Public Works provided computerized listings of accident data which was used for this review. Specifically, this data was analyzed to:

- Identify the most hazardous streets and intersections in the Fort Point Channel/South Boston Study area;
- Indicate the nature of any accident trends that may be developing; and
- Establish a safety basis for short and long term improvements to the Fort Point Channel area street system.

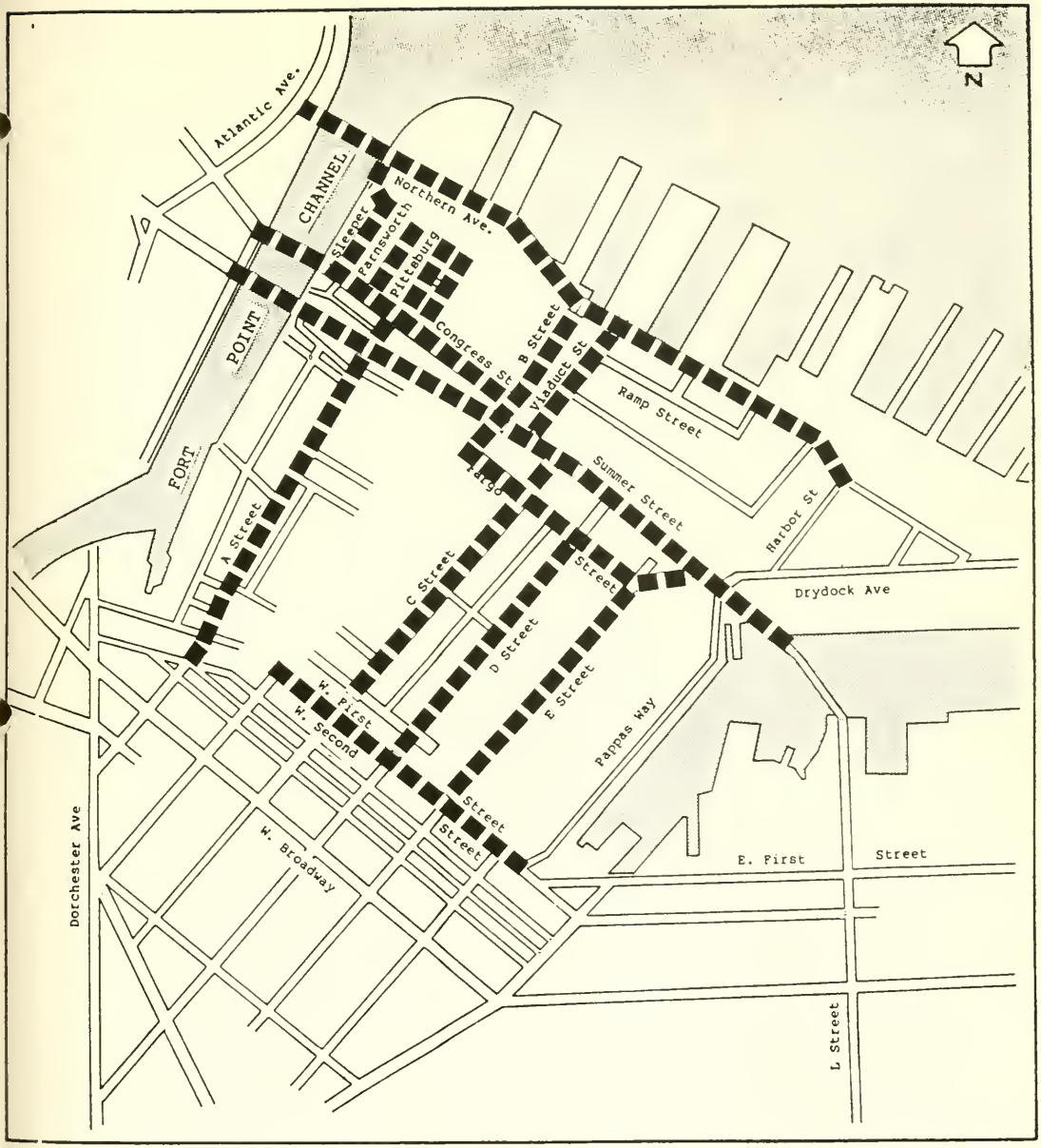
Indicated in Figure 1, accident patterns were examined in the geographical area bounded by the Fort Point Channel on the west, Northern Avenue and the Piers area on the north, Pappas Way on the east, and West First Street on the south. Because it is intended that the data provided be applicable to satisfy safety documentation requirements pertaining to Urban Systems funding for roadway improvements to the area north of Summer Street and west of the Seaport Access Service Roads, particular emphasis is given to that area.

Terms contained in this report such as "rear collision" and "angle collision" are as defined by the Massachusetts Department of Public Works for their computerized accident reporting system (see Appendix 1). Throughout this report, however, the term "link" is used to describe accidents occurring on a street but not at an intersection with a public or private street. An "intersection" accident is one that occurred where two streets intersected or attributed to intersection-related activities.

Not intended to imply street functional classifications, the following east-west oriented streets have been designated as "main" streets for the purpose of data presentation:

- Northern Avenue
- Congress Street
- Summer Street; and
- West First Street.

The remainder of north-south oriented streets have been designated as "secondary" streets.



Streets for Which Accident Data was Obtained

FIGURE 1

ACCIDENT STUDY AREA

II. ACCIDENT HISTORY

A. Overview

The Fort Point Channel/South Boston study area covers in excess of 612 acres. Its street network involves approximately 8 miles of public and private streets. Data on reported accidents was obtained from the Massachusetts Department of Public Works for the three year period of 1980, 1983, and 1984, the most recently available reporting period for computerized state accident files. During this period, there were a total of 283 reported accidents within the study area in which 100 persons were injured, one of which was a fatality. The areawide data is summarized below in Table 1.

Table 1

SUMMARY OF ACCIDENT HISTORY
SOUTH BOSTON/FORT POINT CHANNEL AREA

Reporting Year	Total Accidents	Persons Injured	Fatalities
1980	118	40	0
1983	100	44	1
1984	65	16	0
THREE YEAR TOTALS	283	100	1

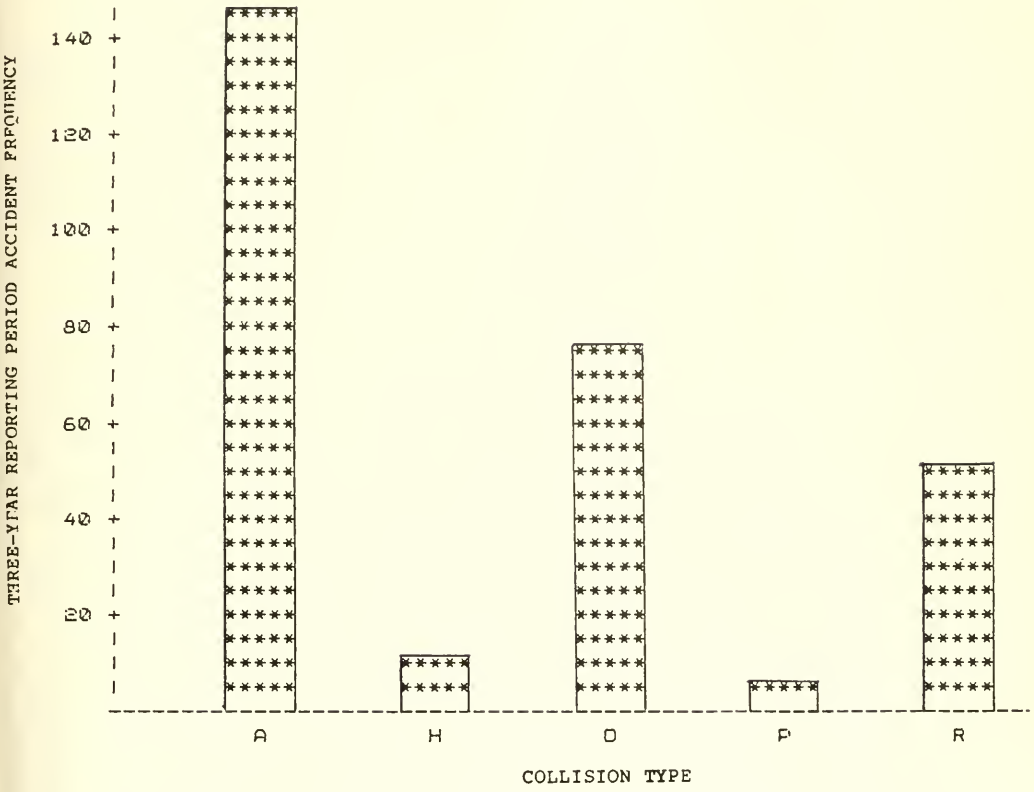
While reported accidents were relatively consistent during 1980 and 1983, the number of reported accidents in 1984 dropped significantly.

A breakdown of the total accidents by type is provided in Table 2. Figure 2 visually compares the accident types over the three year analysis period. For the three year period, 76 percent of the accidents involved property damage only; 24 percent involved personal injuries. During this three year period only one fatality was reported within the study area -- this occurred at the intersection of Summer Street with Pappas Way.

FIGURE 2

COMPARISON OF ACCIDENT TYPES

1980, 1983, 1984



A=angle, H=head, O=other, P=pedestrian, R=rear

Table 2

BREAKDOWN OF ACCIDENT TYPES
SOUTH BOSTON/FORT POINT CHANNEL STUDY AREA

	Accident Type			Collision Type				
Year	Injury	Fatality	Property	Angle	Rear	Head-on	Other	Ped.
1980	24	0	94	63	25	4	24	2
1983	31	1	68	39	17	5	38	1
1984	11	0	54	41	6	2	15	1

Of the different types of collisions identified in Table 2, angle collisions accounted for about 52 percent of all accidents in the study area. Rear end collisions, which accounted for 17 percent of the accidents, were the second most common type of accident in the Fort Point Channel study area. Only four accidents involving pedestrians were reported during the three year study period.

B. Intersection Accidents

An intersection accident is defined as any accident which was reported to have occurred either directly at or approaching an intersection of a public street with another public street or a significant private way (such as Farnsworth or Pittsburgh Streets). In the study area, during the three year reporting period, 143 out of the 283 reported accidents, or about 51 percent, were attributed to intersections.

Overall, the intersection in the study area with the highest frequency of reported accidents -- 20 accidents during the three year reporting period -- was the signalized intersection of D Street with West First Street. Two other intersections, Summer Street at Melcher Street and Northern Avenue at Sleeper Street, averaged five accidents per year over the three year reporting period.

The remainder of the intersections in the study area experienced fewer than four traffic accidents per year over the three year reporting period.

Intersection accidents in 1980, 1983, and 1984 are summarized in Table 3.

C. Link Accidents

Link accidents in 1980, 1983, and 1984 in the South Boston/Fort Point Channel area are summarized in Table 4 in 1980, 1983, and 1984, respectively. Tables 5, 6, and 7 provide detailed summaries of link and intersection accidents. While the number of reported accidents dropped significantly between 1980 and 1983/84, it is suspected that the actual number of accidents probably is higher than reported; this is due to the change in Massachusetts Department of Motor Vehicles reporting requirements from $200 to $500 after 1980.

Northern Avenue

This street experiences the most accidents at the intersection of Sleeper Street with the Northern Avenue bridge. At Sleeper Street, there is a large parking lot that generates rush hour traffic in and out of Northern Avenue. Presently there are no traffic lights to regulate the flow of traffic at the Northern Avenue intersection with Sleeper Street. The existing Northern Avenue bridge is also the scene of numerous accidents.

Summer Street

Summer Street carries the bulk of east/west vehicles travelling in the Fort Point Channel area. It also experienced the highest relative frequency of accidents compared to remainder of the streets in the study area. The large number of trucks using this roadway and the relatively high travel speed of vehicles may contribute to the frequency of accidents along the Summer Street corridor.

Table 3

FORT POINT CHANNEL AREA
SUMMARY OF INTERSECTION ACCIDENTS 1980, 1983,1984

MAIN STREET	INTERSECTION	1980	1983	1984	TOTAL
Summer Street	Viaduct	7	0	0	7
	D Street	4	2	2	8
	Melcher	6	5	4	15
	Others	0	3	3	6
					36
D Street	Fargo	6	3	1	10
	West 1St	5	13	2	20
	Others	0	0	2	2
					32
Northern Ave.	Sleeper	6	6	3	15
	Bridge	0	10	0	10
	B Street	0	1	0	1
					26
Congress	A Street	4	3	2	9
	Sleeper	1	0	0	1
	B Street	0	2	0	2
	Stillings	1	0	0	1
	Melcher	0	0	1	1
	Pittsburgh	0	0	2	2
	Farnsworth	0	1	0	1
					17
C Street	Fargo	4	0	2	6
	West 1St	1	2	3	6
					12
A Street	Melcher	3	1	2	6
	West 1St	2	0	2	4
	Others	1	0	0	1
					11
E Street	West 1St	2	4	3	9
Total Accidents					143

Source: Massachusetts Dept. of Public Works, All Road Traffic Accident Report

Table 4

FORT POINT CHANNEL AREA
SUMMARY OF LINK ACCIDENTS 1980, 1983,1984

LINK	1980	1983	1984	TOTAL
Summer Street	25	10	0	35
Northern Avenue	13	13	0	26
Farnsworth	4	0	13	17
A Street	5	9	2	16
Sleeper	6	3	2	11
Congress	3	0	4	7
C Street	4	1	1	6
D Street	4	0	0	4
Stillings	0	2	0	2
E Street	1	1	0	2
	65	39	22	126

Source: Mass. Dept. Public Works, All Road Traffic Accidents Report

DETAILS OF ACCIDENT OCCURENCES
FORT POINT CHANNEL STUDY AREA
Years 1980, 1983, 1984

YEAR=1980

OBS	Primary Street	Cross Street	LINK	CASE	TYPE	MONTH	HOUR	Number Injured	KILLED	Collision Type
5	A STREET	MELCHER	N	025119	P	8	16	0	0	R
6	A STREET		Y	026721	P	9	10	0	0	O
7	A STREET	MELCHER	N	081258	P	12	00	0	0	A
8	A STREET		Y	084482	P	12	16	0	0	A
9	A STREET		Y	084856	P	12	7	0	0	H
10	A STREET		Y	100680	P	12	15	0	0	A
11	A STREET	MELCHER	N	323192	P	4	7	0	0	H
12	A STREET		N	341409	P	1	00	0	0	A
13	A STREET	BINFORD	N	380986	P	5	14	0	0	A
14	A STREET	W. 1ST	N	386259	I	5	14	2	0	A
15	A STREET		Y	415592	P	7	10	0	0	A
16	C STREET	W. 1ST	N	010542	P	8	15	0	0	O
17	C STREET		Y	297801	P	1	20	0	0	O
18	C STREET	FARGO	N	302444	P	1	16	0	0	A
19	C STREET	FARGO	N	331220	P	1	00	0	0	A
20	C STREET	FARGO	N	333134	P	1	17	0	0	R
21	C STREET	FARGO	N	381031	P	5	5	0	0	A
22	C STREET		Y	386267	I	6	2	1	0	A
23	C STREET		Y	410464	P	7	15	0	0	O
24	C STREET		Y	420195	P	7	17	0	0	R
25	CONGRESS	A STREET	N	033123	P	9	21	0	0	A
26	CONGRESS	STILLINGS	N	077595	I	12	17	1	0	H
27	CONGRESS		Y	093800	I	12	1	1	0	R
28	CONGRESS		Y	093800	I	12	1	1	0	R
29	CONGRESS	A STREET	N	097206	P	10	00	0	0	R
30	CONGRESS	A STREET	N	097843	P	10	17	0	0	R
31	CONGRESS		Y	302867	P	3	11	0	0	O
32	CONGRESS	A STREET	N	309680	P	2	1	.	0	R
33	CONGRESS	SLEEPER	N	334896	P	4	12	0	0	O
34	D STREET	FARGO	N	075750	P	12	12	0	0	H
35	D STREET	FARGO	N	082033	P	12	10	0	0	A
36	D STREET	FARGO	N	082688	P	12	00	0	0	A
37	D STREET	W. 1ST	N	088704	P	10	8	0	0	A
38	D STREET	FARGO	N	098500	1	11	15	0	0	A
39	D STREET	W. 1ST	N	100252	P	12	11	0	0	O
40	D STREET	W. 1ST	N	100890	P	12	12	0	0	A
41	D STREET	W. 1ST	N	314788	P	2	3	0	0	A
42	D STREET		Y	335325	P	1	7	0	0	A
43	D STREET		Y	337071	P	1	7	0	0	O
44	D STREET	W. 1ST	N	351455	P	2	11	0	0	A
45	D STREET		Y	356117	I	5	12	3	0	A
46	D STREET	FARGO	N	356117	I	5	12	3	0	A
47	D STREET		Y	356117	I	5	12	3	0	A
48	D STREET	FARGO	N	377222	P	5	16	0	0	A
49	E STREET	W. 1ST.	N	093079	P	12	8	6	0	A
50	E STREET		Y	338645	P	1	23	0	0	A
51	E STREET	W. 1ST	N	380161	1	5	17	2	0	A
52	FARNSWORTH		Y	001681	P	9	11	0	0	P
53	FARNSWORTH		Y	314181	P	3	00	0	0	P
54	FARNSWORTH		Y	327481	P	3	14	0	0	O
55	FARNSWORTH		Y	412921	P	7	10	0	0	O
56	NORTHERN	SLEEPER	N	002964	P	9	8	0	0	R
57	NORTHERN		Y	006656	P	8	12	0	0	A

FORT POINT CHAN[illegible] STUDY AREA
Years 1980, 1983, 1984

YEAR=1980
(continued)

OBS	Primary Street	Cross Street	LINK	CASE	TYPE	MONTH	HOUR	Number Injured	KILLED	Collision Type
58	NORTHERN		Y	015227	P	8	10	0	0	A
59	NORTHERN	SLEEPER	N	024368	P	8	15	0	0	A
60	NORTHERN	SLEEPER	N	066232	P	9	10	0	0	R
61	NORTHERN	SLEEPER	N	085724	P	12	17	0	0	R
62	NORTHERN		Y	095101	I	12	19	1	0	A
63	NORTHERN		Y	095184	P	10	19	0	0	A
64	NORTHERN		Y	095926	P	12	21	0	0	A
65	NORTHERN		Y	097167	I	10	23	2	0	D
66	NORTHERN		Y	314917	P	3	19	0	0	P
67	NORTHERN	SLEEPER	N	329402	P	3	15	0	0	A
68	NORTHERN		Y	353869	P	1	11	0	0	R
69	NORTHERN		Y	354989	P	2	18	0	0	A
70	NORTHERN	SLEEPER	N	371719	P	4	15	0	0	R
71	NORTHERN		Y	380657	P	5	11	0	0	R
72	NORTHERN		Y	381886	I	4	16	0	0	A
73	NORTHERN		Y	402202	P	7	17	0	0	A
74	NORTHERN		Y	408530	P	7	8	1	0	A
75	SLEEPER		Y	078295	I	11	00	1	0	R
76	SLEEPER		Y	091639	P	11	10	0	0	A
77	SLEEPER		Y	334896	P	4	12	0	0	D
78	SLEEPER		Y	378522	P	5	13	0	0	R
79	SLEEPER		Y	389815	P	5	13	0	0	R
80	SLEEPER		Y	393836	P	6	00	0	0	A
81	SUMMER		Y	006061	I	8	4	1	0	D
82	SUMMER	VIADUCT	N	027467	P	8	20	0	0	D
83	SUMMER	D STREET	N	029846	P	11	20	0	0	A
84	SUMMER	D STREET	N	033080	I	00	01	1	0	A
85	SUMMER	MELCHER	N	040380	P	4	18	0	0	R
86	SUMMER		Y	062286	P	9	11	0	0	R
87	SUMMER		Y	065908	I	9	2	1	0	D
88	SUMMER	MELCHER	N	075383	P	11	15	0	0	A
89	SUMMER		Y	075622	P	11	11	0	0	D
90	SUMMER	D STREET	N	077184	P	12	15	0	0	D
91	SUMMER		Y	080018	I	12	16	1	0	R
92	SUMMER		Y	084167	P	12	11	0	0	A
93	SUMMER	MELCHER	N	094608	P	11	22	0	0	A
94	SUMMER		Y	095810	P	11	10	0	0	A
95	SUMMER	MELCHER	N	098173	P	11	11	0	0	A
96	SUMMER	VIADUCT	N	098173	P	11	11	0	0	A
97	SUMMER	VIADUCT	N	099816	I	12	12	2	0	A
98	SUMMER	D STREET	N	298529	P	3	13	0	0	A
99	SUMMER		Y	300167	P	2	16	0	0	A
100	SUMMER		Y	302905	P	3	10	0	0	R
101	SUMMER	VIADUCT	N	307685	I	3	16	1	0	A
102	SUMMER		Y	312727	P	2	18	1	0	U
103	SUMMER		Y	317053	P	3	18	0	0	D
104	SUMMER		Y	320868	P	3	11	0	0	R
105	SUMMER	MELCHER	N	324094	P	4	11	0	0	A
106	SUMMER		Y	324321	P	3	13	0	0	A
107	SUMMER		Y	324766	P	2	00	0	0	A
108	SUMMER		Y	327229	1	3	1	1	0	U
109	SUMMER		Y	327648	P	4	00	0	0	D

DETAILS OF ACCIDENT OCCURENCES
FORT POINT CHANNEL STUDY AREA
Years 1980, 1983, 1984

YEAR=1980
(continued)

OBS	Primary Street	Cross Street	LINK	CASE	TYPE	MONTH	HOUR	Number Injured	KILLED	Collision Type
110	SUMMER		Y	342575	P	1	13	0	0	A
111	SUMMER		Y	355781	P	5	15	0	0	A
112	SUMMER	VIADUCT	N	364890	P	5	14	0	0	R
113	SUMMER		Y	373951	I	5	19	1	0	A
114	SUMMER	VIADUCT	N	380365	I	4	7	1	0	A
115	SUMMER		Y	385333	P	4	18	0	0	O
116	SUMMER		Y	390282	I	5	8	1	0	R
117	SUMMER	VIADUCT	N	397359	P	6	17	0	0	A
118	SUMMER	MELCHER	N	402612	P	6	8	0	0	A
119	SUMMER		Y	412135	P	6	13	0	0	R
120	SUMMER		Y	417157	P	7	15	0	0	O
121	SUMMER		Y	421034	P	7	00	0	0	R
122	SUMMER		Y	47099	P	7	00	.	0	A
YEAR								40		

DETAILS OF ACCI[illegible] OCCURENCES
FORT POINT CHANNEL STUDY AREA
Years 1980, 1983, 1984

YEAR=1983

OBS	Primary Street	Cross Street	LINK	CASE	TYPE	MONTH	HOUR	Number Injured	KILLED	Collision Type
123	A		Y	00188A	P	01	14	0	0	R
124	A		Y	18259B	P	09	02	0	0	A
125	A		Y	18288B	P	09	00	0	0	O
126	A		Y	18386A	P	02	01	0	0	A
127	A		Y	18387A	P	02	08	0	0	A
128	A		Y	19186A	P	02	12	0	0	O
129	A	MELCHER	N	33225N	P	03	14	0	0	A
130	A		Y	34408A	P	03	14	0	0	O
131	A		Y	59598A	I	05	17	1	0	O
132	A		Y	63946B	P	12	07	0	0	O
133	C	WEST 1ST	N	47581B	I	11	10	1	0	A
134	C		Y	63301B	I	12	02	1	0	O
135	C	WEST 1ST	N	90356A	P	07	10	0	0	H
136	CONGRESS	FRANSWORTH	N	47055B	P	11	08	0	0	A
137	CONGRESS	A	N	47593B	P	11	15	0	0	O
138	CONGRESS	A	N	47593B	P	11	15	0	0	O
139	CONGRESS	A	N	47593B	P	11	15	0	0	O
140	CONGRESS	B	N	89837A	P	07	13	0	0	O
141	CONGRESS	B	N	89837A	P	07	13	0	0	O
142	D	WEST 1ST	N	00981A	P	01	08	0	0	A
143	D	WEST 1ST	N	01037A	I	01	17	1	0	A
144	D	WEST 1ST	N	01390A	I	01	22	0	0	A
145	D	WEST 1ST	N	01493A	P	01	18	0	0	A
146	D	WEST 1ST	N	03530B	P	01	01	0	0	A
147	D	WEST 1ST	N	03574B	P	08	09	2	0	O
148	D	WEST 1ST	N	32227B	P	10	10	0	0	O
149	D	WEST 1ST	N	32366B	I	10	21	4	0	A
150	D	WEST 1ST	N	33418A	P	03	12	0	0	A
151	D	WEST 1ST	N	34367A	I	03	18	1	0	A
152	D	WEST 1ST	N	47495A	P	04	13	0	0	R
153	D	WEST 1ST	N	59732A	P	05	15	0	0	R
154	D	WEST 1ST	N	63711B	I	12	12	2	0	O
155	D STREET	FARGO STREET	N	00310A	P	1	18	0	0	A
156	D STREET	FARGO STREET	N	18257B	I	9	01	2	0	O
157	D STREET	FARGO STREET	N	18731B	I	9	01	1	0	A
158	E	WEST 1ST	N	18395B	I	09	08	1	0	A
159	E	WEST 1ST	N	18416B	P	09	03	0	0	A
160	E	WEST 1ST	N	18524B	P	09	01	0	0	A
161	E	WEST 1ST	N	34133A	P	03	14	0	0	A
162	E		Y	60634A	P	05	07	0	0	O
163	NORTHERN		Y	00200A	P	01	11	0	0	P
164	NORTHERN	AT BRIDGE	N	00520A	I	01	07	2	0	O
165	NORTHERN		Y	02890B	I	08	24	1	0	O
166	NORTHERN		N	02890B	I	08	24	1	0	O
167	NORTHERN	B	N	02956B	P	08	11	0	0	A
168	NORTHERN	AT BRIDGE	N	02990B	P	08	11	0	0	H
169	NORTHERN	BLEEPER	N	13220B	P	08	17	0	0	A
170	NORTHERN		Y	13429B	P	08	15	0	0	A
171	NORTHERN	AT BRIDGE	N	18647A	I	09	01	2	0	O
172	NORTHERN	AT BRIDGE	N	18709A	P	09	01	.	0	R
173	NORTHERN	AT BRIDGE	N	18828B	P	09	14	0	0	A
174	NORTHERN		Y	32385B	I	10	22	1	0	A
175	NORTHERN	AT BRIDGE	N	33530A	P	03	17	0	0	O

DETAILS OF ACCIDENT OCCURENCES
FORT POINT CHANNEL STUDY AREA
Years 1980, 1983, 1984

YEAR=1983
(continued)

OBS	Primary Street	Cross Street	LINK	CASE	TYPE	MONTH	HOUR	Number Injured	KILLED	Collision Type
176	NORTHERN	AT BRIDGE	N	33585A	I	03	15	1	0	A
177	NORTHERN		Y	34407A	P	03	00	0	0	H
178	NORTHERN	AT BRIDGE	N	46841A	P	04	16	0	0	A
179	NORTHERN	SLEEPER	N	47217B	I	11	03	1	0	A
180	NORTHERN	SLEEPER	N	47217B	I	11	03	3	0	A
181	NORTHERN		Y	51462A	I	04	20	1	0	O
182	NORTHERN		Y	51639A	P	04	10	0	0	O
183	NORTHERN	SLEEPER	N	532666	P	10	03	0	0	H
184	NORTHERN	SLEEPER	N	60343A	P	05	18	0	0	A
185	NORTHERN	SLEEPER	N	60343A	P	05	18	0	0	A
186	NORTHERN		Y	63688B	P	12	09	0	0	O
187	NORTHERN		Y	64753A	P	05	07	0	0	O
188	NORTHERN		Y	65271A	P	05	11	0	0	A
189	NORTHERN	AT BRIDGE	N	65280A	P	05	06	0	0	A
190	NORTHERN		Y	65301A	P	05	17	0	0	A
191	NORTHERN	AT BRIDGE	N	75081A	I	06	24	2	0	O
192	NORTHERN		N	76049A	P	06	17	0	0	A
193	NORTHERN		Y	80310A	P	06	00	0	0	O
194	SLEEPER		Y	31131B	P	10	09	0	0	O
195	SLEEPER		Y	60341A	P	05	16	0	0	O
196	SLEEPER		Y	60430A	P	05	19	0	0	A
197	STILLINGS		Y	01027A	P	01	16	0	0	A
198	STILLINGS		Y	3610B	P	08	00	0	0	O
199	SUMMER	D	N	00497A	P	01	10	0	0	A
200	SUMMER	MELCHER	I	00820A	I	11	13	1	0	A
201	SUMMER	MELCHER	P	00885A	P	11	10	0	0	A
202	SUMMER	HARBOR	N	02611B	I	08	11	1	0	A
203	SUMMER		Y	03144B	P	08	04	0	0	A
204	SUMMER	PAPPAS	N	036489	F	11	23	0	1	O
205	SUMMER		Y	18300A	I	02	02	1	0	O
206	SUMMER	A	N	18410A	P	02	08	0	0	A
207	SUMMER		Y	18598B	P	09	12	0	0	O
208	SUMMER		Y	33210A	I	03	18	0	0	H
209	SUMMER	MELCHER	N	33279A	I	03	16	1	0	A
210	SUMMER		Y	47100B	I	11	03	2	0	A
211	SUMMER		Y	53953A	P	05	00	0	0	O
212	SUMMER		Y	60107A	P	05	12	0	0	O
213	SUMMER		Y	60839A	P	05	18	0	0	O
214	SUMMER	A	N	63501B	P	12	10	0	0	A
215	SUMMER	D	N	640073	I	12	09	1	0	A
216	SUMMER	MELCHER	N	64334B	P	12	06	0	0	A
217	SUMMER		Y	75571A	I	06	10	1	0	O
218	SUMMER		Y	7563A	P	06	00	0	0	A
219	SUMMER	MELCHER	N	89917A	P	07	14	0	0	A
220	SUMMER ST	D STREET	N	00497A	P	1	10	0	0	A
221	SUMMER ST	D STREET	N	64007B	I	12	09	1	0	A
222	VIADUCT		Y	06262A	I	01	23	3	0	O
YEAR								44		

DETAILS OF ACCIDENT OCCURENCES
FORT POINT CHANNEL STUDY AREA
Years 1980, 1983, 1984

YEAR=1984

OBS	Primary Street	Cross Street	LINK	CASE	TYPE	MONTH	HOUR	Number Injured	KILLED	Collision Type
223	A	MELCHER	N	00365A	P	01	04	0	0	A
224	A		Y	34014A	P	03	10	0	0	A
225	A	MELCHER	N	52035A	P	04	07	0	0	A
226	A	WEST 1ST	N	536587	P	10	06	1	0	O
227	A		Y	542159	P	11	17	0	0	O
228	A	WEST 1ST	N	64002A	I	02	08	1	0	R
229	C		Y	12856B	P	08	19	0	0	A
230	C	FARGO	N	51754A	P	04	16	0	0	A
231	C	WEST 1ST	N	536517	P	10	13	0	0	A
232	C	FARGO	N	538293	I	11	24	1	0	H
233	C	WEST 1ST	N	547319	I	12	24	1	0	A
234	C	WEST 1ST	N	64002A	I	05	00	2	0	A
235	CONGRESS	MELCHER	N	00365A	P	01	04	0	0	A
236	CONGRESS	PITTSBURGH	N	12753B	P	08	11	0	0	A
237	CONGRESS	A	N	20957A	P	02	24	0	0	O
238	CONGRESS	A	N	34814A	P	03	16	0	0	A
239	CONGRESS		Y	545520	P	11	15	0	0	A
240	CONGRESS		Y	551562	H	12	11	0	0	A
241	CONGRESS		Y	64535A	P	05	11	0	0	O
242	CONGRESS	PITTSBURGH	N	80570A	P	06	11	0	0	A
243	CONGRESS		Y	81018A	P	06	18	0	0	A
244	D	CLAFIN	N	12457B	P	08	24	0	0	A
245	D	FARGO	N	34062A	P	03	14	0	0	A
246	D	WEST 1ST	N	80572A	I	06	15	1	0	A
247	D	WEST 1ST	N	95687A	I	07	23	1	0	O
248	D	CLAFIN	N	96291A	P	07	13	0	0	O
249	E	WEST 1ST	N	20807A	P	02	13	0	0	A
250	E	WEST 1ST	N	536370	I	10	13	2	0	A
251	E	WEST 1ST	N	538782	I	11	16	1	0	A
252	NORTHERN	SLEEPER	N	13238B	P	08	17	0	0	A
253	NORTHERN	SLEEPER	N	532666	P	10	03	0	0	H
254	NORTHERN	SLEEPER	N	64753A	P	05	07	0	0	O
255	SLEEPER		Y	526494	P	09	12	0	0	A
256	SLEEPER		Y	548575	P	12	19	0	0	O
257	SUMMER	E STREET	N	00952A	P	01	07	0	0	C
258	SUMMER	MELCHER	N	01315A	P	01	08	0	0	A
259	SUMMER	E	N	06952A	P	01	07	0	0	O
260	SUMMER	CLAFIN	N	12457B	P	08	24	0	0	A
261	SUMMER	MELCHER	N	12460B	P	08	17	0	0	O
262	SUMMER	D	N	152609	P	09	15	0	0	A
263	SUMMER		Y	20533A	I	02	05	1	0	P
264	SUMMER		Y	20538A	P	02	00	0	0	O
265	SUMMER	MELCHER	N	20663A	P	02	19	0	0	A
266	SUMMER		Y	20871A	P	02	00	0	0	O
267	SUMMER		Y	34378A	P	03	07	0	0	A
268	SUMMER		Y	51562A	P	04	06	1	0	R
269	SUMMER	MELCHER	N	52249A	P	04	02	0	0	A
270	SUMMER	D	N	526090	P	09	15	0	0	A
271	SUMMER		Y	532353	P	10	15	0	0	R
272	SUMMER		Y	535096	P	10	00	0	0	A
273	SUMMER	MELCHER	N	540955	P	11	22	0	0	A
274	SUMMER		Y	550310	P	02	16	0	0	A
275	SUMMER		Y	551514	P	12	21	0	0	R

DETAILS OF ACCIDENT OCCURENCES
FORT POINT CHANNEL STUDY AREA
Years 1980, 1983, 1984

YEAR=1984
(continued)

OBS	Primary Street	Cross Street	LINK	CASE	TYPE	MONTH	HOUR	Number Injured	KILLED	Collision Type
276	SUMMER	MELCHER	N	64468A	P	05	14	0	0	A
277	SUMMER		Y	64631A	I	05	14	1	0	A
278	SUMMER	VIADUCT	N	64696A	P	05	13	0	0	A
279	SUMMER	D	N	65253A	P	05	11	0	0	R
280	SUMMER	D	N	65253A	P	05	11	0	0	R
281	SUMMER	MELCHER	N	80037A	I	06	15	2	0	A
282	SUMMER		Y	80390A	P	06	00	0	0	O
283	SUMMER		Y	80924A	P	06	17	0	0	A
284	SUMMER		Y	95259A	P	07	08	0	0	O
285	SUMMER	MELCHER	N	95637A	P	07	18	0	0	A
286	SUMMER	D	N	95656A	P	07	00	0	0	A
287	SUMMER	D	N	95656A	P	07	00	0	0	A
YEAR								16		
								100		

Congress Street

The existence of on street loading docks coupled with closely spaced intersections appear to contribute to accidents along Congress Street. The relatively low number of link accidents is misleading since Congress Street has such a high number of closely spaced intersections.

III. FUTURE ACCIDENT TRENDS

The Massachusetts Department of Public Works project to relocate the Northern Avenue bridge is in the final design stage. Since the Northern Avenue bridge and its approaches are to be relocated, it is anticipated that accident problems identified in this report will be substantially mitigated in the future. The re-alignment of the Northern Avenue between the Fort Point Channel and B Street as well as the straightening of Sleeper Street is expected to correct many of the safety hazards associated with existing Northern Avenue as well as the Sleeper Street intersection with Northern Avenue.

In addition, the recent reconstruction of A Street coupled with South Boston truck routing modifications is expected to produce safety benefits in the near term.

Changes in the regional and local roadway system and land use growth in the South Boston/Fort Point Channel area will have substantial impacts on potential long term accident trends in South Boston. Increases in traffic and pedestrian volumes are expected to increase the potential for accidents significantly. Projections of safety impacts associated with the local components of street system modifications will be made as this study progresses. The relative effectiveness of local street options, on a safety basis, will be addressed in an upcoming technical memorandum which will document the evaluation of local street system options.

PB-006 1B
GLH:gh

BOSTON
TRANSPORTATION
DEPARTMENT

TECHNICAL MEMORANDUM
2.1

METHODOLOGY FOR FORT POINT CHANNEL AREA YEAR 2010 TRAFFIC PROJECTIONS

OVERVIEW

This is the third in a series of eight Technical Memoranda being prepared for the City of Boston Transportation Department under a Public Works Economic Development (PWED) grant from the Commonwealth of Massachusetts to address planning issues associated with the Fort Point Channel/South Boston Roadway Improvements Study. Fay, Spofford & Thorndike, Inc. (FST) is the lead firm in a team of six consultants who are preparing this study. The other members of the Study Team include:

- Cambridge Systematics, Inc. - Computerized Traffic Forecasts
- The BSC Group - Base Mapping and Utilities
- Lozano, White and Associates, Inc. - Streetscape Issues
- David Dixon & Associates - Urban Design and Land Use Issues
- Facilities Data, Inc. - Traffic Data and Accident Studies

Cambridge Systematics, Inc., on behalf of the Study Team, prepared this Technical Memorandum to document the extensive traffic forecasting effort undertaken for the Fort Point Channel Study area using the TRANPLAN computer model. The TRANPLAN model has been used to evaluate existing (1987) conditions against year 2010 traffic conditions on study area roadways for a variety of local street and public transportation options for a single land use scenario. At the conclusion of this study, the TRANPLAN model and procedures for its use will be turned over to the BTD so that subsequent changes in local roadway conditions can be modelled as conditions change.

The evaluation of the modelling effort described in this technical memorandum will be documented in Technical Memoranda 2.2 along with discussions of land use, urban design, and environmental issues associated with options reviewed.

FORT POINT CHANNEL/SOUTH BOSTON
ROADWAY IMPROVEMENT STUDY

Technical Memorandum 2.1

Methodology for Fort Point Channel Land Use and Traffic Forecasts

1.0 INTRODUCTION

A key objective of the project is to develop a local street system for the Fort Point Channel area, which will be consistent with and supportive of the new Seaport Access and South Boston Bypass roadways as well as serve the rapidly developing land uses of the area. An equally important objective is to design a roadway system that minimizes traffic intrusion in the South Boston residential neighborhoods.

A critical component in the development of this roadway system is the need to assess the feasibility of alternative traffic circulation and roadway options. Given the need to accurately evaluate several traffic configurations at both the local roadway and highway system levels, roadway network simulation of the Fort Point Channel/South Boston area and beyond will be undertaken using the personal computer (PC) based transportation planning computer software (TRANPLAN). The TRANPLAN model allows a comprehensive, area-wide approach to assess each proposed roadway option, identifying and measuring potential traffic shifts and impacts to roadways throughout the area. Essentially, TRANPLAN assigns trips to a roadway network. A unique feature of TRANPLAN is its iterative, capacity restraint approach of assigning vehicle trips to the roadway network. Initially vehicle trips are assigned to the minimum time paths. For later computer iterations, a volume to capacity speed adjustment curve (capacity restraint formula) adjusts speeds and travel times on each link to reflect on traffic demand and growing levels of congestion for

particular travel paths. This procedure results in trip reassignments to secondary paths that are less congested. The results are an equilibrium loaded network with all trips reflecting the minimum overall travel times available in the network.

This memorandum describes the year 2010 land use assumptions for the Fort Point Channel area, and the procedures used to develop the model for testing several potential roadway system configurations.

2.0 LAND USE FORECASTS

The Fort Point Channel study area year 2010 land use database is based partly on work undertaken by Cambridge Systematics for the Central Artery/Third Harbor Tunnel (CA/THT) project.

2.1 Methodology

The CA/THT project area contains 24 districts (e.g. Financial District, East Cambridge/East Somerville, South Station/Leather District, Industrial South Boston, etc.). Each district includes land use data inventoried by individual parcels with gross square feet of floor space classified into one of ten land use categories:

1. office
2. retail
3. medical
4. educational
5. cultural/recreational
7. industrial
8. hotel
10. residential
11. transportation

Note: #6 was reserved for parking information and there is no category for #9.

The Fort Point Channel project area is similar to the CA/THT "Industrial South Boston" district, which is subdivided into 25 zones under the CA/THT project. Information on 1987 land use is based on data obtained from the

Boston Assessing Department. Tax-exempt properties were also researched and added to the database.

To project land use beyond 1987, information for proposed public and private sector development projects was obtained from the BRA, Massport and EDIC. The probability of each project's completion by 1995 and 2010 was estimated based on the combined judgment of Cambridge Systematics, CTPS and Massport. For example, if a 500,000 square foot office proposal was given a 60 percent probability for occupancy by 1995, then 300,000 square feet was added to the office land use total for that zone for 1995. Preliminary tables of square footage by zone and land use for 1986, 1995, and 2010 were thus produced.

The methodology and results were reviewed with the planning staffs of the BRA and Massport on October 4, 1988. Several changes were incorporated in the land use inventory based on this meeting, and included:

1. Less (300,000 sf) housing and more office in the Boston Wharves area (zone 233F)

2. Additional conversions from industrial to new office space in the Binford Street area (zone 238A)

3. Additional office (150,000 sf) and industrial (100,000 sf) space in the BMIP area (zone 67A)

4. Additional residential space (500 d.u.) and parkland along the Reserved Channel (zone 67B)

5. Additional office (500,000 sf) space near the THT along Summer Street and demolition of existing industrial space (zone 237D)

6. Additional office (400,000 sf) and industrial (400,000 sf) space near the THT south of the General Ship corp. area (zone 237B)

7. Additional office (500,000 sf), hotel (300,000 sf), and retail (200,000 sf) space in the World Trade Center expansion areas (zone 233J)

8. Additional residential (500,000 sf) and less office space in the central McCourt area (zone 233H)

9. Non-hotel space in the Piers 1 through 4 area not to exceed 4.5 million square feet (zones 233A&B)

These changes were incorporated into the land use database and were used as base input for the Fort Point Channel project. Excerpts from the meeting held with the staffs of CTPS and Massport are included in Cambridge Systematics Memo 21: "External Review of Land Use Projections", November 15, 1988 and are included in Appendix B of this memorandum.

2.2 Revised Zone System

The Fort Point Channel project calls for a more refined zone system than the Central Artery project. Based on a need to perform detailed analysis, a study area consisting of 52 zones was developed from the original Central Artery project system of 25 zones. The new system differentiates zones by existing and proposed development and by proposed roadways such as the Seaport Access roadway and Congress Street extension (Figure 1).

The Central Artery project land use data were disaggregated to this new zone system to derive a Fort Point Channel land use database. The data are compiled in a spreadsheet which lists land use by category and square footage by parcel and zone for years 1986 and 2010. These files are summarized in Appendix A of this memorandum.

3.0 MODEL DEVELOPMENT

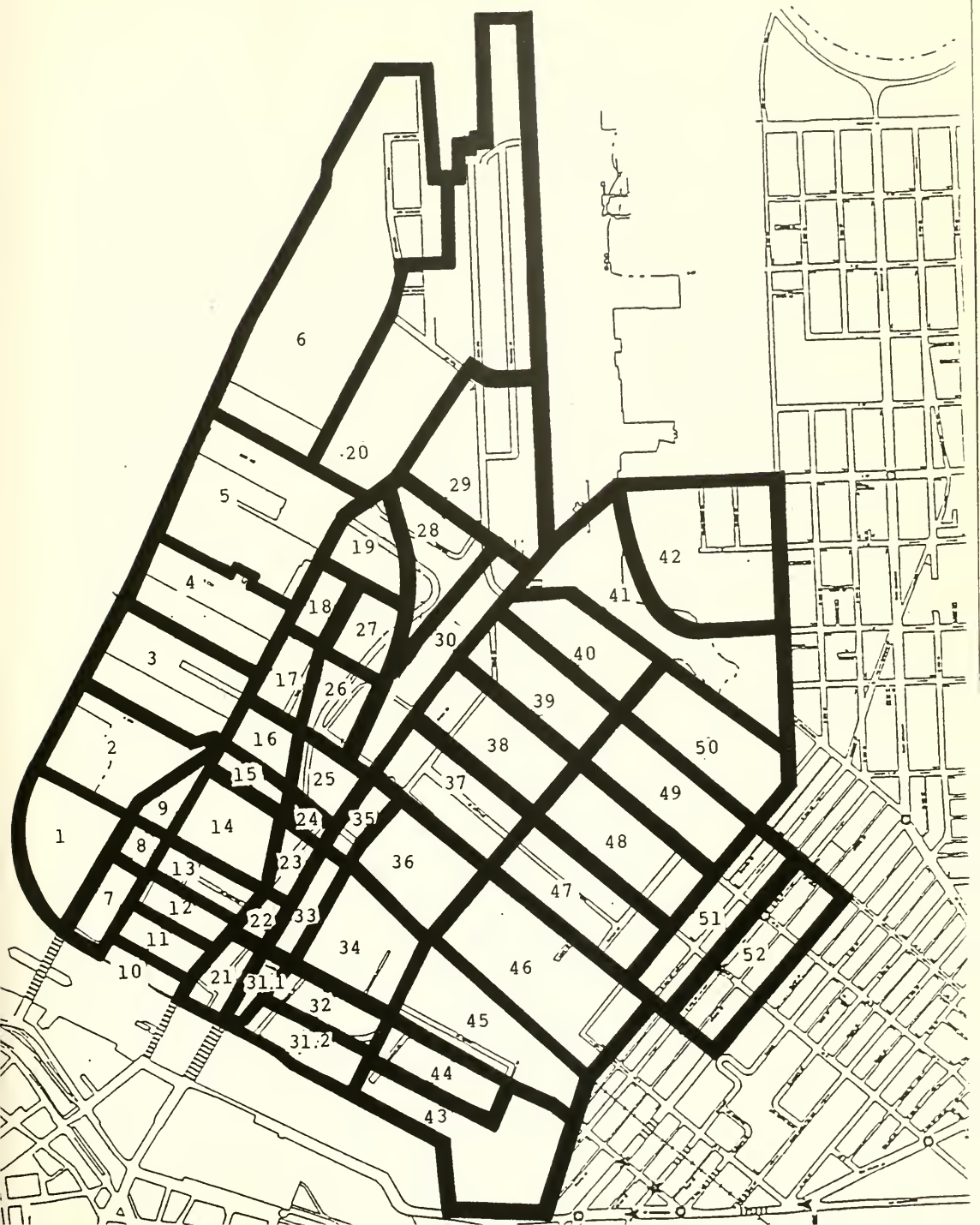
The modeling process essentially requires a roadway network, peak hour trip tables and computer software for distributing the vehicle trips on the network. The following sections describe how each component was developed.

3.1 Roadway Network

The roadway network comprises a large number of nodes and links that are given a set of characteristics such as free flow travel speed, length, capacity, travel direction and intersection turning restrictions, which are used

Figure 1

Fort Point Channel Area- Revised Zone Network



by the computer software to assign trips. Figure 2 shows the network developed for the project. The network is considerably larger than the actual Fort Point Channel study area. This is to insure that regional or system-wide traffic impacts are considered in all the options analyzed. For example, the network extends south beyond the Neponset River in Quincy, in order to allow trips to shift between the Southeast Expressway and Morrissey Boulevard.

The original network characteristics for years 1987 (Existing) and 2010 (Full Build) were obtained from the Central Transportation Planning Staff (CTPS) regional highway network. Additional link and node information was added for both the residential and industrial areas of South Boston. Characteristics for the new links and nodes were originally based on the CTPS roadway classification system. During calibration of the 1987 network and trip table, several roadways were given new speed and capacity attributes to reflect more closely actual traffic volumes observed for these streets.

3.2 Trip Table Development

Year 2010 AM and PM peak hour vehicle trip tables were developed. Baseline information included the land use forecasts discussed in the previous section and Year 2010 transit services as developed under "Alternative 4 - Underground Transitway" of the MBTA's Fort Point Channel project Draft EIR.

Figure 3 outlines the basic procedures used to develop these trip tables. A key objective in this development process has been to maintain consistency with the Central Artery/Third Harbor Tunnel (CA/THT) project and the MBTA South Boston Piers project.

Both the CTPS regional 1987 peak period vehicle trip table and the CA/THT 1987 peak period vehicle trip table were used as initial input. The CTPS table was used because it covers the Fort Point Channel study area (Figure 2).

Figure 2

Fort Point Channel Area- Highway Network

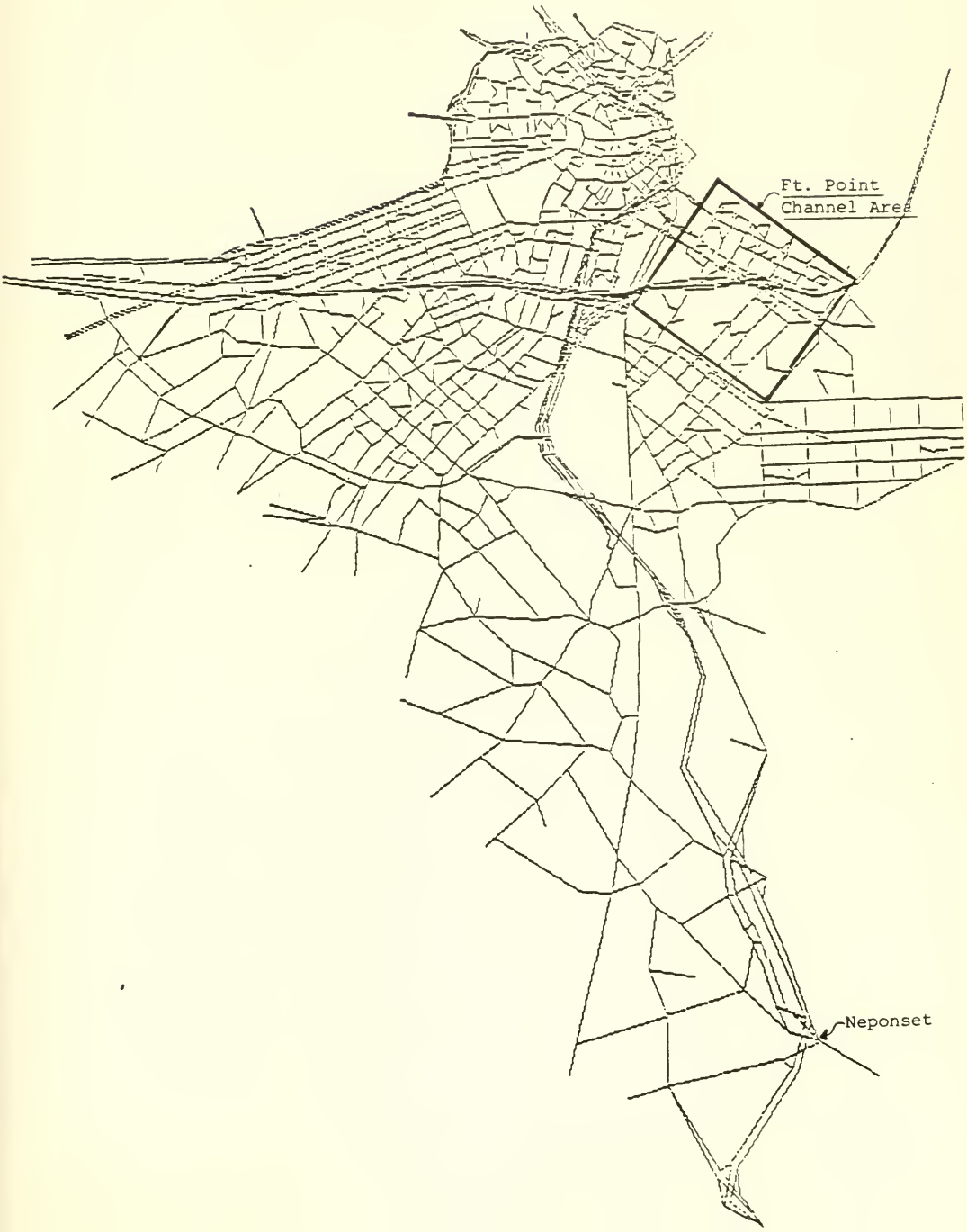
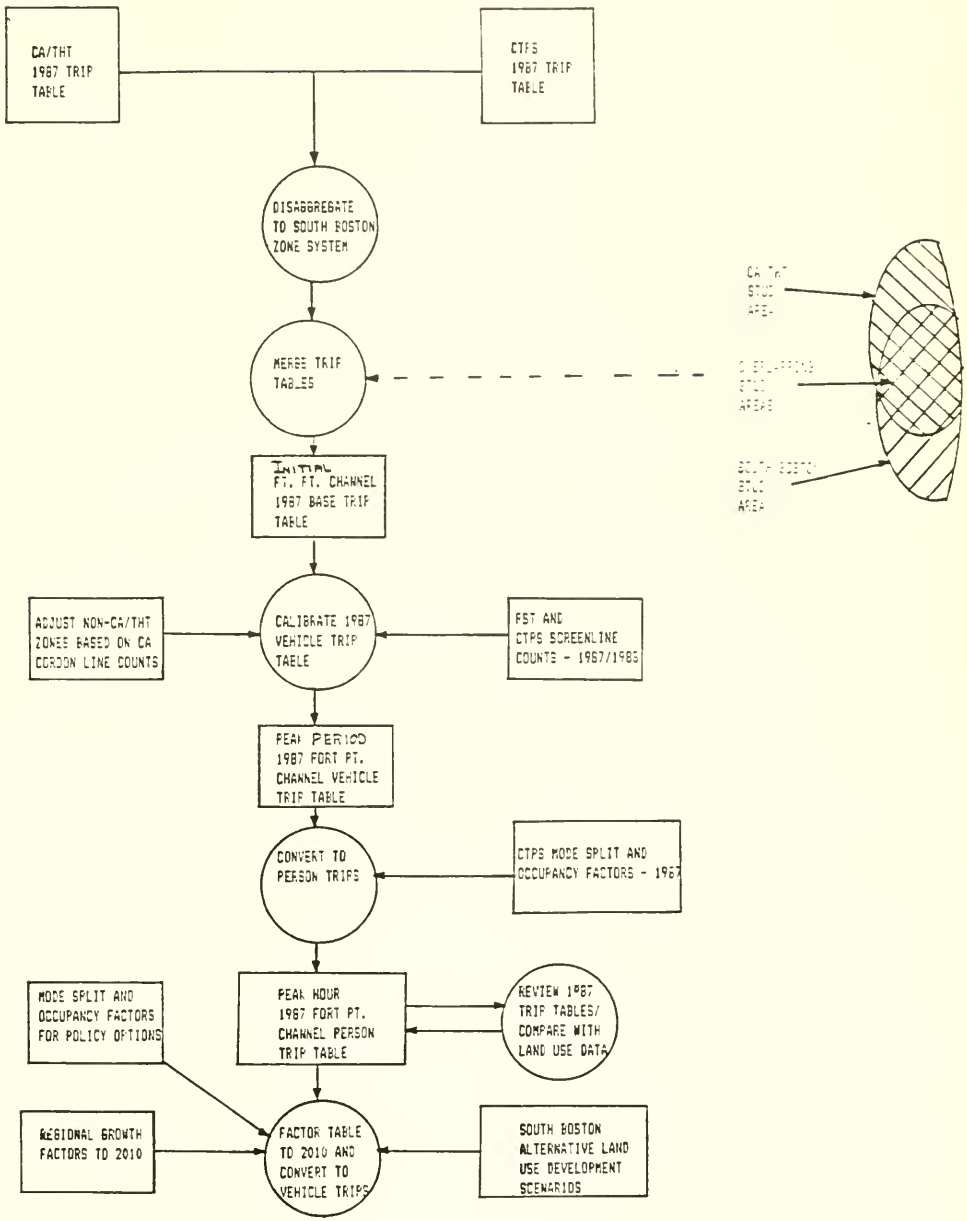


Figure 3

Fort Point Channel- Year 2010 Trip Table Development



The CA/THT table was also used because it provides more recent (1987) travel information for several critical zones in South Boston.

The zone systems for both trip tables were disaggregated to reflect the more detailed project zone system used for this project. Information required to perform this disaggregation included land use by zone, person trip generation factors by land use, vehicle occupancy rates and transit mode shares. This information was used to generate an estimate of vehicle trips (in and out) by zone (note: hereafter, the zones of the CTPS trip table system will be referred to as 'CTPS zones', and those of this project will be referred to as 'South Boston zones'.) Using these estimates of vehicle trips by South Boston zone, percentages of CTPS zone vehicle trip origins and destinations were assigned to our South Boston zone system.

This 1987 peak period trip table was then calibrated to match screenline traffic counts provided by Fay, Spofford and Thorndike and CTPS, to ensure that the 1987 trip table accurately represented current conditions. Calibration was accomplished using a modified iterative proportional fitting algorithm or FRATAR procedure. With FRATAR, origin and destination trips which pass through a given screenline are added to that screenline's trip total. The trip table is then adjusted so that screenline trip totals match actual screenline counts. At the same time, total zonal origins and destinations are maintained as constant as possible, so that total addition or subtraction of trips to or from the original trip table is kept to a minimum. The outcome of the calibration process is a trip table that accurately matches current (observed) traffic volumes with minimal modification of the original trip table.

After the calibration process, the 1987 peak period vehicle trip table was converted to person trips using available CTPS vehicle occupancy factors

and mode share information. Converting to person trips allows easier application of new vehicle occupancy rates, walk trips and transit mode shares for year 2010. In addition, person trips allow easier checking of the trip table by directly comparing it with trips generated by the 1987 land use files and trip generation rates.

The 1987 peak period person trip table was factored to year 2010 using three sets of information, including:

- Year 1987 and 2010 Land Use Files - Peak period person trips by zone for years 1987 and 2010 (within the Fort Point area) were generated and compared to derive study area growth factors to year 2010. The person trip generation factors used are listed in Appendix A.

- Year 2010 Regional Growth Factors - For zones outside the Fort Point Channel study area, growth factors available through the CA/THT project were used to factor-up person trips for these external zones to year 2010.

- Year 2010 Person to Vehicle Trip Factors - Person trip to vehicle trip conversion was undertaken using factors developed by zone that take into account walk trips, truck and taxi trips, auto occupancy and transit mode share. Further details of the procedures used to derive these factors are discussed in Cambridge Systematics Memo 10 (updated) for the CA/THT project, December 7, 1988 and summarized in Appendix C.

These steps resulted in a baseline year 2010 peak period (AM and PM) vehicle trip table. Vehicle trips could now be assigned to the highway network (see Section 3.1) using TRANPLAN.

3.3 Trip Assignment (TRANPLAN Modeling)

The most common practice in modeling peak-hour travel is to produce a twenty-four hour assignment and predict peak-hour trips as a constant percentage of the twenty-four hour volumes (usually 6 to 10 percent). Some agencies have developed peak-period models by using the percentage of the trip type that occurs during a peak period to create a peak-period trip table, but even using this approach, the percentage of travel occurring in the peak one-hour

period is generally a fixed percentage of the peak period and no effort is made to relate peaking characteristics to the anticipated level of congestion for the assignment. The result is generally an over-prediction of the peak-hour volume.

The method used for Fort-Point Channel, referred to as peak spreading, was developed as a part of a research effort by CSI for the Arizona Transportation Research Center. It was originally implemented as a modification within UROAD. For the Fort-Point Channel modeling efforts, the peak spreading model was incorporated into the TRANPLAN equilibrium assignment model.

An equilibrium loaded assignment is completed when no trip can be assigned to an alternate path without increasing the total travel time of all trips in the network. The Equilibrium assignment procedure consists of an iterative series of traffic assignments. As each iteration is carried out, the travel times on all streets and highways (links) are adjusted to reflect the levels of congestion corresponding to the assigned traffic volumes.

When applying the peak spreading model within the equilibrium assignment, the peak spreading parameters are applied each time a link travel time is updated with the results of the current iteration's assignment.
The parameters have the effect of reducing the three hour peak period assigned volumes to hourly volumes according to the model specifications.

The Fort-Point Channel peak spreading model specifications were regional parameters applied across all facility types, times of day and over several years. Sufficient data were not available to specify peak spreading parameters for different facility types or times of day. The estimated parameters yielded the following function.

$$P = .333 + .0739 * e^{(-1.48 * V/C)}$$

or

$$\ln(P-.333) = -2.61 - 1.48*V/C$$

Where:

P=ratio of peak-hour volume to peak-period (three-hour) volume,

V/C= volume/capacity ration for the three-hour period

This estimated function for calculating the peak hour volumes (one hour) from the peak period (three-hour) was incorporated into the TRANPLAN equilibrium assignment procedure as described above. The function shows a relationship between the three hour volume to capacity ratio and the percent of hourly volume to three-hour volume as is illustrated in Figure 4.

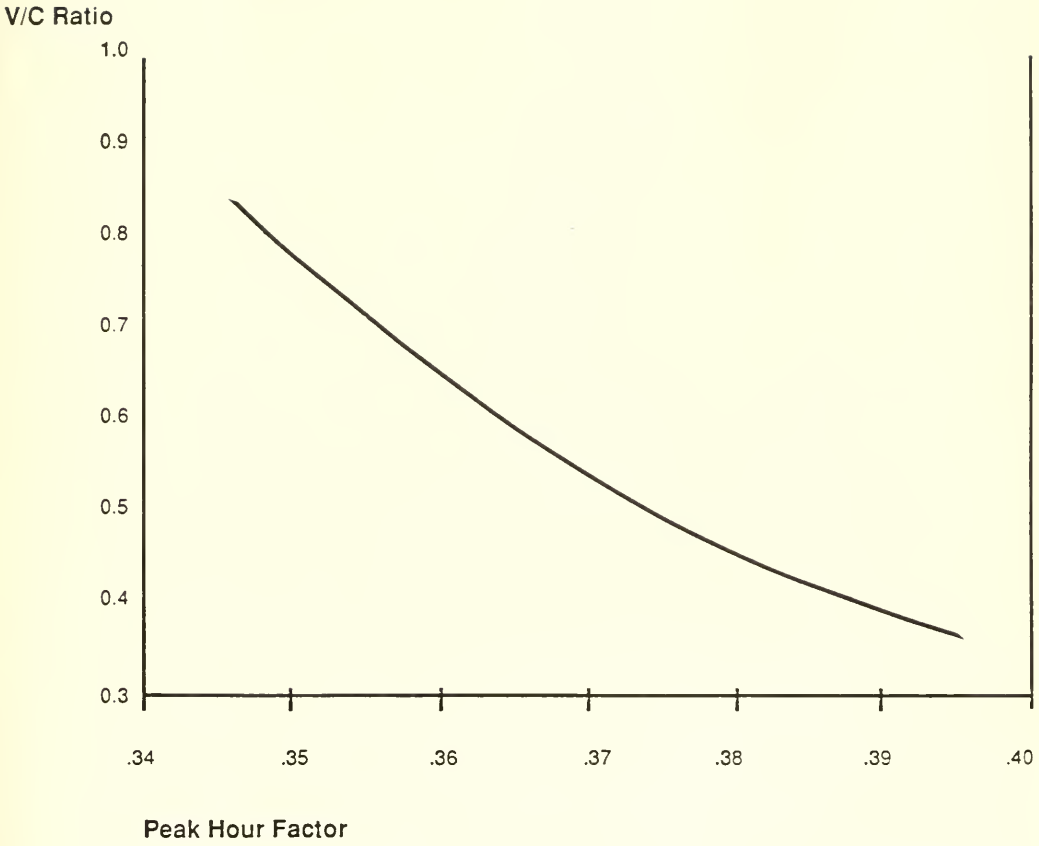
4.0 ALTERNATIVES

A preliminary set of alternative roadway configurations for the Fort Point Channel area have been identified by the BTD and FST and are illustrated in Appendix D. These alternatives, analyzed with the TRANPLAN model, include:

The base condition with 2010 land use assumptions plus the streets through Boston Wharf parcel as they exist today -- i.e., Pittsburgh and Farnsworth are not extended, but including a Sleeper Street extension (part of the New Northern Avenue project) and two-way operations on both Sleeper and Pittsburgh Streets. Congress Street remains unchanged and the State's current Seaport Access Road alignment and ramps are assumed (i.e., no relocated ramps). All of Massport's roadway improvements are assumed as well as reconstruction of B Street and New Ramp Street. The F ramp connection to B Street is not assumed. D Street is not to be extended, nor are any neighborhood traffic prohibitions on South Boston streets approaching the Fort Point Channel industrial area as in Alternative 1. The Calvin Street Extension is not assumed nor is the Congress Street extension between the inbound and outbound Seaport Access Road Ramps. This alternative would comprise the base

Figure 4

Regression Curve for Peak Spreading Trends



"local street do-nothing" against which all other build scenarios will be compared.

Alternative 1

The initial full-build network configuration without the "AA" ramp (BCA's proposed optional truck/bus ramp primarily on Massport property) and with no general traffic on either the Massport Haul Road or the South Boston Bypass Road, i.e., just trucks and buses. The peak hour modal share north of Summer Street is assumed to be 55%; south of Summer Street, the peak hour modal share is assumed to be 30%. To simulate exclusive bus/truck use, capacities on the South Boston Bypass and Massport Haul Roads were reduced to projected levels of truck/bus utilization on the basis of available truck/bus projections from points south of the Fort Point Channel (including the recent FST count program) The area south of Summer Street would have access to the Bypass Road by way of a proposed new Street and A Street via a new First Street bridge to replace the Second Street bridge in South Boston. Neighborhood traffic controls, through the use of one-way streets and tight radius "nubbins" would be used to discourage truck and automobile intrusions into South Boston residential neighborhoods.

Alternative 1A

Alternative 1, except with the existing 1987 transit mode shares during peak hours (i.e., 25% north of Summer Street; 17% south of Summer Street). Alternative 1A, while assuming a large amount of transit use, effectively, assumes much lower transit use than all other alternatives.

Alternative 1B

Alternative 1, except that the Massport Haul Road will be open to general traffic; the South Boston Bypass Road will be open only to trucks and buses.

Alternative 1C

Alternative 1, except that D Street would not be connected between Summer Street and the Massport Haul Road. The one-way street/"nubbin" neighborhood

traffic controls would not be instituted as discussed above. A New Ramp Street parallel to Congress Street between the Massport Haul Road and Congress Street is assumed under this alternative. The traffic forecasts associated with Alternatives 1C and 1D should determine the value of neighborhood traffic control devices and the D Street connection.

Alternative 1D

Alternative 1C, but existing South Boston neighborhood circulation patterns would be retained.

Alternative 1E

Alternative 1, except eliminate the piece of the Congress Street Extension between the Seaport Access Road off ramp and B Street as well as the "Harmonic" Street connection between B Street and the Seaport Access Road Off-ramp Extension. The "F Ramp" (i.e., southbound Seaport Access Road Off-ramp) is located where the State proposes it, at the northbound Seaport Access Road Off-ramp location. This alternative should allow us to determine the transportation value of the Congress Street extension as well as the transportation value of aligning the southbound Seaport Access Road off-ramp at B Street.

Alternative 1F

Alternative 1, except the Massport Haul Road and South Boston Bypass Road and connections are assumed as open to general traffic; vehicular capacities will be changed on these links to address the potential for general traffic absorption. This alternative should allow us to decide on the merits associated with reserving the Haul Road/South Boston Bypass Road for exclusive truck/bus use vs. diverting some displaced D Street traffic onto it.

Alternative 1G

Alternative 1, except that Dorchester Avenue is assumed to be reopened to general traffic. This alternative allows us to evaluate the impact of

possible D Street traffic displacements on the South Boston/Fort Point Channel traffic network.

Alternative 1H

Alternative 1, except that a proposed "AA" ramp is assumed to replace the connection between the Massport Haul Road and B Street. The purpose of this alternative is to assess the traffic impacts associated with this ramp.

Alternative 1I

Alternative 1, except that the Seaport Access Ramp G/D serving south and west Seaport Access Road movements would be moved northerly to a cross street between Northern Avenue and the Congress Street; the northbound Seaport Access Road ramp would remain as originally planned.

Alternative 1HI

Alternative 1, except that both the Seaport Access Ramp "G/D" and the "AA" ramp are implemented; the "AA" ramp is assumed to replace the proposed connection between the Massport Haul Road and B Street. This is the Alternative which has the most local roadway modifications.

APPENDIX A

FORT POINT CHANNEL STUDY AREA
1987 AND 2010 LAND USE INFORMATION BY ZONE
PLUS EXISTING (1987) AND FORECAST (2010)
TRIP GENERATION FACTORS

APPENDIX A

ESTIMATED PERSON TRIP GERNERATION RATES FOR

EXISTING AND PROPOSED LAND USES

(REVISED)

LAND USE CATEGORY		Trip Generation Rates Daily One-way	A.M. Peak Hr. In	A.M. Peak Hr. Out	P.M. Peak Hour In	P.M. Peak Hour Out
Office	Work	4.3	1.7	0.0	0.1	1.5
	Nonwork	2.4	0.4	0.2	0.2	0.3
	Total	6.7	2.1	0.2	0.3	1.8
Retail	Work	3.7	0.3	0.1	0.4	0.5
	Nonwork	26.5	0.3	0.3	1.9	2.0
	Total	30.2	0.6	0.4	2.3	2.5
Industrial	Work	1.4	0.3	0.1	0.1	0.3
	Nonwork	0.8	0.2	0.0	0.1	0.2
	Total	2.2	0.5	0.1	0.2	0.5
Cultural/Rec	Work	1.2	0.1	0.0	0.2	0.1
	Nonwork	24.4	0.9	0.3	1.5	1.6
	Total	25.7	1.0	0.3	1.8	1.7
Medical	Work	3.6	0.7	0.2	0.1	0.9
	Nonwork	6.3	0.3	0.1	0.3	0.6
	Total	9.9	1.0	0.3	0.4	1.6
Educational	Work	1.2	0.3	0.0	0.0	0.3
	Nonwork	11.9	3.6	1.6	1.3	2.2
	Total	13.1	3.9	1.6	1.3	2.5
Hotel	Work	1.3	0.1	0.0	0.0	0.1
	Nonwork	7.5	0.8	0.4	0.5	1.1
	Total	8.7	0.9	0.4	0.5	1.3
Residential	Total	8.1	0.2	1.0	1.1	0.5

LAND USE CLASSIFICATIONS

CODE	CLASSIFICATION
0	Vacant Land
1	Office
2	Retail
3	Medical
4	Educational
5	Cultural/Recreational
6	Parking
7	Industrial
8	Hotel
9	(No longer applicable)
10	Residential
11	Transportation

[illegible]
LAND USE SQUARE FOOTAGE PER ZONE

[illegible]	LAND USE	[illegible]	[illegible]
1.0	1	[illegible]	[illegible]
1.0	2	0	155,000
1.0	2	1,167	0
TOTAL		1,167	155,000
1.0	5	0	110,000
1.0	6	0	675,000
1.0	7	6,915	0
1.0	8	0	70,000
1.0	9	0	0
1.0	10	0	770,111
2.1	1	0	771,111
2.1	2	0	75,111
2.1	2	37,111	37,111
TOTAL		37,111	112,111
2.1	3	0	1,111,811
2.1	3	0	1,111,111
2.1	9	0	0
2.1	11	0	725,000
3.0	1	800	800
3.0	1	0	0
3.0	1	85,000	851,000
3.0	1	0	0
3.0	1	0	0
3.0	1	0	0
TOTAL		85,800	851,800
3.0	2	1,751	1,751
3.0	2	0	0
3.0	2	100,000	100,000
3.0	2	0	0
TOTAL		101,751	101,751
3.0	5	100	100
3.0	5	400,000	400,000
TOTAL		400,100	400,100
3.0	7	3,625	3,625
3.0	7	4,371	4,371
3.0	7	0	0
TOTAL		7,996	7,996

ZONE	LAND USE	[illegible]	PROPOSED
3.0	5	0	0
4.0	1	0	20,000
4.0	1	0	130,000
	TOTAL	0	150,000
4.0	2	8,777	8,777
4.0	2	404	404
	TOTAL	9,181	9,181
4.0	7	6,[illegible]	6,[illegible]
4.0	7	[illegible]	4,[illegible]
4.0	7	11,[illegible]	11,[illegible]
4.0	7	3,481	3,481
4.0	7	6,[illegible]	6,[illegible]
4.0	7	[illegible]	[illegible]
4.0	7	14,[illegible]	14,[illegible]
4.0	7	[illegible]	[illegible]
4.0	7	[illegible]	[illegible]
4.0	7	[illegible]	[

[illegible]
LAND USE SQUARE FOOTAGE PER ZONE

ZONE	LANDUSE	[illegible]	[illegible]
7.0	1	.	[illegible]
7.0	2	8,187	8,187
7.0	3	2,720	2,720
	TOTAL	10,907	40,907
8.0	1	0	1,040,000
9.0	9	0	0
10.0	1	[illegible]	[illegible]
10.0	2	[illegible]	[illegible]
10.0	3	[illegible]	[illegible]
10.0	4	[illegible]	[illegible]
	TOTAL	[illegible]	[illegible]
10.1	5	[illegible]	[illegible]
10.1	6	[illegible]	[illegible]
	TOTAL	[illegible]	[illegible]
10.0	9	0	0
11.1	1	[illegible]	[illegible]
11.0	1	[illegible]	[illegible]
11.0	1	[illegible]	[illegible]
11.0	1	0	[illegible]
11.0	1	[illegible]	[illegible]
11.0	1	[illegible]	[illegible]
11.0	1	[illegible]	[illegible]
11.0	1	[illegible]	[illegible]
11.0	1	[illegible]	[illegible]
	TOTAL	[illegible]	[illegible]
11.0	6	0	0
11.0	6	[illegible]	[illegible]
11.0	6	[illegible]	[illegible]
11.0	6	[illegible]	[illegible]

SELECTED FORM FOR FOUR UNUSUAL STYLES
LAND USE SQUARE FOOTAGE PER ZONE

ZONE	LANDUSE	EXISTING	PROPOSED
11.0	6	0	0
11.0	6	0	0
11.0	6	0	0
11.0	6	0	0
TOTAL		0	0
11.0	7	20,833	5,208
11.0	7	25,000	0
11.0	7	63,737	16,434
11.0	7	10,614	0
TOTAL		122,185	21,642
11.0	9	0	0
11.0	10	1,188	1,188
11.0	10	845	845
11.0	10	888	888
11.0	10	1,188	1,188
11.0	10	1,288	1,288
11.0	10	1,188	1,188
11.0	10	888	888
11.0	10	1,288	1,288
11.0	10	1,288	1,288
11.0	10	1,688	1,688
11.0	10	1,288	1,288
11.0	10	1,188	1,188
11.0	10	788	788
11.0	10	1,088	1,088
11.0	10	1,478	1,478
11.0	10	1,188	1,188
11.0	10	1,488	1,488
11.0	10	1,088	1,088
11.0	10	1,188	1,188
11.0	10	1,488	1,488
11.0	10	870	870
11.0	10	1,288	1,288
11.0	10	1,688	1,688
11.0	10	1,288	1,288
11.0	10	888	888
11.0	10	1,288	1,288
11.0	10	1,888	1,888
11.0	10	1,288	1,288
11.0	10	1,888	1,888
11.0	10	1,288	1,288
11.0	10	1,088	1,088
11.0	10	720	720
11.0	10	918	918
11.0	10	1,647	1,647
11.0	10	1,488	1,488
11.0	10	1,188	1,188
11.0	10	1,178	1,178
11.0	10	1,188	1,188
11.0	10	1,428	1,428
11.0	10	1,082	1,082
11.0	10	1,128	1,128
11.0	10	1,330	1,330

GRADE	LAND USE	SQUARE FOOTAGE	TOTAL SQUARE FOOTAGE
11.0	10	1,401	1,401
11.0	10	1,604	1,604
11.0	10	1,263	1,263
11.0	10	1,425	1,425
11.0	10	1,261	1,261
11.0	10	1,127	1,127
11.0	10	1,033	1,033
11.0	10	883	883
11.0	10	1,055	1,055
11.0	10	1,170	1,170
11.0	10	1,401	1,401
11.0	10	887	887
11.0	10	848	848
11.0	10	1,831	1,831
11.0	10	1,141	1,141
11.0	10	1,111	1,111
11.0	10	1,281	1,281
11.0	10	881	881
11.0	10	1,381	1,381
11.0	10	1,211	1,211
11.0	10	1,911	1,911
11.0	10	1,281	1,281
11.0	10	0	0
11.0	10	1,141	1,141
11.0	10	811	811
11.0	10	841	841
11.0	10	1,121	1,121
11.0	10	1,021	1,021
11.0	10	1,415	1,415
11.0	10	887	887
11.0	10	1,321	1,321
11.0	10	1,881	1,881
11.0	10	0	81,000
11.0	10	1,410	1,410
11.0	10	0	10,000
11.0	10	811	811
11.0	10	840	840
11.0	10	811	811
11.0	10	1,151	1,151
11.0	10	1,111	1,111
11.0	10	1,011	1,011
11.0	10	1,000	1,000
11.0	10	1,811	1,811
11.0	10	925	925
11.0	10	1,835	1,835
11.0	10	1,120	1,120
TOTAL		101,915	215,325

12.0	1	0	0
12.0	1	18,000	18,000
12.0	1	10,818	10,818
12.0	1	36,140	36,140
TOTAL		65,758	145,738

[illegible]
LAND USE SQUARE FOOTAGE PER [illegible]

[illegible]	LANDUSE	[illegible]	[illegible]
12.0	6	0	114,300
12.0	7	18,900	0
12.0	7	8,514	0
12.0	7	48,000	0
12.0	7	38,776	9,544
12.0	7	12,600	0
12.0	7	21,382	0
12.0	7	48,600	12,150
12.0	7	10,000	0
12.0	7	25,000	0
12.0	7	[illegible]	6,110
12.0	7	[illegible]	[illegible]
12.0	7	37,500	9,372
	TOTAL	333,272	37,483
12.0	9	0	0
12.1	10	[illegible]	61,[illegible]
12.0	10	[illegible]	54,[illegible]
12.0	10	[illegible]	61,[illegible]
	TOTAL		171,[illegible]
12.0	11	1,211	1,211
10.1	1	0	28,[illegible]
10.0	1	8,538	8,538
10.0	1	0	48,010
	TOTAL	8,538	84,548
10.0	2	0	8,[illegible]
10.0	7	1,218	[illegible]
10.0	7	48,068	48,068
10.0	7	1,571	[illegible]
10.0	7	10,140	0
10.0	7	9,[illegible]	9,[illegible]
10.0	7	[illegible]	[illegible]
10.0	7	[illegible]	[illegible]
10.0	7	[illegible]	[illegible]
10.0	7	10,640	[illegible]
10.0	7	[illegible]	[illegible]
10.0	7	17,140	[illegible]
10.0	7	[illegible]	[illegible]
10.0	7	7,088	0
10.0	7	40,864	0
10.0	7	45,696	0
10.0	7	049	0
10.0	7	17,040	0
10.0	7	20,061	0
	TOTAL	000,400	50,.25
10.0	9	0	0
10.0	9	0	0

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
LAND USE SQUARE FOOTAGE PER ZONE

ZONE	LANDUSE	EXISTING	PROPOSED
	TOTAL	0	0
13.0	10	0	10,000
13.0	10	0	440,000
13.0	10	0	50,000
13.0	10	0	60,000
13.0	10	0	30,000
13.0	10	0	92,000
	TOTAL	0	682,000
14.0	1	0	561,500
14.0	1	0	107,500
	TOTAL	0	769,000
14.0	2	0	2,500
14.0	2	0	7,500
	TOTAL	0	10,000
15.0	1	1,300	1,300
15.0	1	0	178,000
15.0	1	0	225,000
	TOTAL	1,300	404,300
15.0	2	0	12,500
15.0	2	12,800	2,200
15.0	2	0	18,500
	TOTAL	12,800	33,200
15.0	7	3,180	7,795
15.0	7	28,400	8,350
	TOTAL	84,521	12,145
16.0	7	109,010	0
17.0	1	0	210,000
17.0	1	3,443	0
17.0	1	0	15,000
	TOTAL	3,443	1,030,000
17.0	2	0	250,000
17.0	2	1,720	0
17.0	2	0	130,000
	TOTAL	1,720	500,000
17.0	5	0	400,000
17.0	5	0	250,000
	TOTAL	0	650,000
17.0	7	5,700	0
17.0	7	2,200	0
17.0	7	3,154	0
17.0	7	9,847	0

[illegible]
LAND USE SQUARE FOOTAGE PER ZONE

ZONE	LAND USE TOTAL	EXISTING USE	PROPOSED USE
		10,[illegible]	[illegible]
17.0	9	0	0
18.0	1	240	240
18.0	1	881	881
18.0	1	925	925
18.0	1	911	911
18.0	1	811	811
18.0	1	3,135	3,135
18.0	1	1,754	1,754
18.0	1	2,760	2,760
18.0	1	403	403
18.0	1	446	446
18.0	1	846	846
	TOTAL	13,1[illegible]	13,1[illegible]
18.0	2	1,50[illegible]	1,50[illegible]
18.0	2	858	858
18.0	2	1,283	1,283
18.0	2	822	822
18.0	2	2,768	2,768
18.0	2	825	825
18.0	2	4,944	4,944
18.0	2	920	920
18.0	2	2,044	2,044
	TOTAL	16,[illegible]	16,[illegible]
18.0	5	2[illegible]	2[illegible]
18.0	7	8,798	8,798
18.0	7	7,918	7,918
18.0	7	2,481	2,481
18.0	7	8,530	8,530
18.0	7	28,820	28,820
18.0	7	5,451	5,451
18.0	7	1,787	1,787
18.0	7	7,550	7,550
18.0	7	10,420	10,420
18.0	7	41,[illegible]	41,[illegible]
18.0	7	[illegible]	[illegible]
	TOTAL	108,[illegible]	108,[illegible]
18.0	9	0	0
19.0	1	1,920	1,920
19.0	1	9,174	9,174
	TOTAL	11,094	11,094
19.0	7	10,000	10,000
19.0	7	12,909	12,909
19.0	7	11,697	11,697
19.0	7	9,174	9,174
19.0	7	17,968	17,968

[illegible] COUNTY, FLA. PLANT CHANNEL STUDY - M.S.H.
LAKE JOE SQUARE FOOTAGE PER ZONE

ZONE	LANDUSE	EXISTING[illegible]	PROPOSED[illegible]
19.0	7	87,352	87,352
19.0	7	111,000	111,000
TOTAL		209,733	209,733
20.0	1	3,813	3,813
20.0	1	76,392	76,392
20.0	1	35,200	35,200
20.0	1	15,000	15,000
TOTAL		130,405	130,405
20.0	2	0	10,000
20.0	4	24,648	24,648
20.0	6	0	0
20.0	7	14,201	14,201
20.0	7	12,128	12,128
21.0	7	72,240	72,240
21.0	7	0	84,000
20.0	7	112,888	112,888
20.0	7	0	12,870
20.0	7	0	252,000
21.0	7	38,111	38,111
21.0	7	21,751	21,751
21.0	7	12,824	12,824
21.0	7	0	10,000
TOTAL		281,892	621,725
20.0	9	0	0
20.0	11	67,000	67,000
21.0	1	44,370	44,370
21.0	1	32,688	32,688
21.0	1	5,513	5,513
21.0	1	100,000	100,000
21.0	1	0	111,000
21.0	1	55,951	55,951
21.0	1	10,000	10,000
21.0	1	71,115	71,115
21.0	1	61,720	61,720
21.0	1	52,000	52,000
21.0	1	15,328	15,328
21.0	1	76,200	76,200
21.0	1	54,370	54,370
21.0	1	68,000	68,000
TOTAL		647,249	747,249
21.0	2	5,878	5,878
21.0	2	0	5,000
21.0	2	5,878	5,878
21.0	2	22,000	22,000
21.0	2	735	735

SOUTH BOSTON POINT POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

ZONE	LANDUSE	EXISTING USE	PROPOSED USE
	TOTAL	84,471	81,471
21.0	6	97,000	97,000
21.0	7	38,320	0
21.0	7	47,586	47,586
21.0	7	16,341	0
	TOTAL	102,257	47,586
21.0	9	0	0
21.0	9	0	0
21.0	9	0	0
	TOTAL	0	0
22.0	1	1,000	1,000
22.0	1	0	30,000
22.0	1	9,213	9,213
22.0	1	7,890	7,890
22.0	1	0	31,000
22.0	1	10,837	10,837
	TOTAL	28,738	111,703
22.0	2	2,000	2,000
22.0	2	4,878	4,878
	TOTAL	6,878	6,878
22.0	7	28,289	28,289
22.0	7	46,015	0
22.0	7	50,593	10,400
22.0	7	19,520	4,880
22.0	7	21,674	21,674
22.0	7	38,492	9,510
	TOTAL	206,589	74,988
22.0	9	0	0
22.0	10	0	20,000
24.0	9	0	0
25.0	1	9,592	0
25.0	7	24,870	0
25.0	9	0	0
26.0	9	0	0
27.0	7	0	40,000
27.0	9	0	0

SOUTH BOSTON PORT POINT CHANNEL ETC. AREA
LAND USE SQUARE FOOTAGE PER ZONE

ZONE	LAND USE	EXISTING SQFT	PROPOSED...
28.0	2	28,682	28,682
29.0	1	0	500,000
29.0	1	0	40,000
29.0	1	16,920	16,920
29.0	1	6,654	6,654
29.0	1	0	50,000
29.0	1	0	50,000
	TOTAL	23,574	663,574
29.0	2	8,114	8,114
29.0	2	0	3,000
	TOTAL	8,114	11,114
29.0	6	0	0
29.0	7	0	18,254
29.0	7	0	300,000
29.0	7	1,877,572	1,877,572
29.0	7	0	150,000
29.0	7	10,110	10,110
29.0	7	0	275,134
29.0	7	000,110	000,110
29.0	7	1	20,110
29.0	7	150,250	150,250
29.0	7	28,700	28,700
	TOTAL	1,916,922	3,287,270
29.0	11	24,109	24,109
29.0	11	0	50,000
	TOTAL	24,109	74,109
30.0	1	1,750	1,750
30.0	1	0	400,000
30.0	1	24,150	24,150
	TOTAL	25,900	425,900
30.0	2	0	20,000
30.0	7	232,000	232,000
30.0	9	0	0
31.1	1	32,100	32,100
31.1	1	0,140	0,140
31.1	1	1,500	1,500
31.1	1	2,964	2,964
31.1	1	1,507	1,507
31.1	1	50,072	50,072
31.1	1	3,669	3,669
31.1	1	17,405	17,405

SOUTH BOSTON FORT POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

ZONING	LANDUSE	EXISTING USING	POTENTIAL
31.1	1	3,377	3,377
31.1	1	0	50,000
31.1	1	1,541	1,541
31.1	1	42,520	42,520
31.1	1	2,231	2,231
TOTAL		162,389	212,389
31.1	2	2,468	2,468
31.1	7	32,108	0
31.1	7	42,520	42,520
31.1	7	51,156	0
31.1	7	45,403	0
TOTAL		171,187	42,520
31.1	10	2,640	2,640
31.1	10	0	0
31.1	10	1,340	1,340
31.1	10	1,941	1,941
31.1	10	2,751	2,751
31.1	10	1,210	1,210
31.1	10	1,940	1,940
31.1	10	2,800	2,800
31.1	10	0	0
31.1	10	0	30,000
31.1	10	1,980	1,980
31.1	10	2,811	2,811
TOTAL		19,281	49,920
31.2	1	0	30,000
31.2	1	0	300,000
31.2	1	0	30,000
31.2	1	0	30,000
31.2	1	14,833	14,833
TOTAL		14,833	404,833
31.2	7	52,800	0
31.2	7	82,000	10,200
31.2	7	37,997	0
31.2	7	82,800	0
TOTAL		194,997	10,200
31.2	9	0	0
31.2	9	0	0
TOTAL		0	0
31.2	10	0	20,000
31.2	10	0	20,000
31.2	10	0	30,000
TOTAL		0	70,000
32.0	1	28,222	28,222
32.0	1	0	80,000
TOTAL		28,222	108,222

SOUTH BOSTON FORT POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

SUBZONE	LANDUSE	EXISTING(SQFT)	PROPOSED(SQFT)
32.0	7	43,500	43,500
32.0	7	34,235	0
32.0	7	99,900	0
32.0	7	2,620	2,620
32.0	7	28,560	0
32.0	7	85,025	85,025
32.0	7	43,505	0
	TOTAL	337,365	131,145
32.0	10	0	55,000
33.0	1	10,717	10,717
33.0	1	4,667	4,667
	TOTAL	15,384	15,384
33.0	7	46,130	46,130
33.0	7	7,584	7,584
33.0	7	9,809	9,809
33.0	7	78,474	78,474
33.0	7	38,448	38,448
33.0	7	17,087	17,087
33.0	7	30,338	30,338
33.1	7	52,800	52,800
33.0	7	51,792	51,792
	TOTAL	308,452	308,452
34.0	1	6,427	6,427
34.0	1	7,468	7,468
	TOTAL	13,895	13,895
34.0	7	88,200	88,200
34.0	7	55,700	55,700
34.0	7	90,000	90,000
34.0	7	27,342	27,342
34.0	7	88,200	88,200
34.0	7	20,827	20,827
	TOTAL	370,269	370,269
35.0	1	3,500	3,500
35.0	2	980	980
35.0	7	19,366	19,366
35.0	7	70,545	70,545
35.0	7	10,964	10,964
35.0	7	6,405	6,405
	TOTAL	107,280	107,280
36.0	1	2,685	2,685
36.0	1	11,645	11,645
	TOTAL	14,330	14,330

SEWER DISTRICT FORT POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

SZONE	LANDUSE	EXISTING1988	PROPOSED1988
36.0	7	50,080	50,080
37.0	1	4,805	4,805
37.0	1	9,107	9,107
37.0	1	9,235	9,235
37.0	1	3,827	3,827
37.0	1	0	1,000,000
37.0	1	0	183,980
37.0	1	0	150,000
37.0	1	13,200	13,200
37.0	1	7,875	7,875
	TOTAL	48,049	1,382,009
37.0	2	4,729	4,729
37.0	2	3,503	3,503
37.0	2	1,290	1,290
37.0	2	2,925	2,925
37.0	2	2,977	2,977
37.0	2	0	7,443
37.0	2	8,453	8,453
	TOTAL	23,877	31,320
37.0	6	0	178,950
37.0	7	4,366	4,366
37.0	7	11,400	11,400
37.0	7	64,028	64,028
37.0	7	88,755	88,755
37.0	7	3,378	3,378
37.0	7	28,400	28,400
37.0	7	79,200	79,200
37.0	7	4,398	4,398
37.0	7	2,500	2,500
37.0	7	124,835	124,835
37.0	7	150,930	150,930
37.0	7	30,000	30,000
37.0	7	12,750	12,750
37.0	7	18,805	18,805
37.0	7	4,800	4,800
	TOTAL	644,295	644,295
37.0	10	0	480,000
38.0	1	0	437,248
38.0	1	529,200	529,200
38.0	1	13,904	13,904
38.0	1	4,000	4,000
	TOTAL	547,104	984,352
38.0	7	57,600	57,600
38.0	7	32,472	32,472
38.0	7	54,656	54,656
38.0	7	24,640	24,640

SOUTH BOSTON POST POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

SUBZONE	LANDUSE	EXISTING SQUARE FOOTAGE	PROPOSED SQUARE FOOTAGE
38.0	7	497,200	0
TOTAL		606,618	183,368
38.0	9	0	0
38.0	9	0	0
TOTAL		0	0
39.0	1	0	100,000
39.0	7	200,000	200,000
39.0	9	0	0
40.0	1	0	5,000
40.0	5	78,400	78,400
40.0	7	35,225	35,225
40.0	7	25,024	25,024
TOTAL		60,249	61,249
41.0	1	24,440	24,440
41.0	1	12,484	12,484
41.0	1	68,316	68,316
TOTAL		105,240	105,240
41.0	7	252,290	252,290
41.0	7	74,582	74,582
41.0	7	20,000	20,000
41.0	7	81,448	81,448
TOTAL		428,290	428,290
42.0	1	20,400	20,400
42.0	1	17,472	17,472
42.0	1	4,640	4,640
TOTAL		42,512	42,512
42.0	2	4,676	4,676
42.0	2	10,150	10,150
TOTAL		14,826	14,826
42.0	7	17,472	17,472
42.0	7	8,736	8,736
42.0	7	15,000	15,000
42.0	7	26,630	26,630
42.0	7	4,736	4,736
42.0	7	21,740	21,740
42.0	7	1,000	1,000
42.0	7	7,900	7,900
42.0	7	760	760
42.0	7	24,200	24,200
TOTAL		128,176	128,176

SOUTH BOSTON POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

SBZONE	LANDUSE	EXISTING USES	PROPOSED USES
43.0	0	0	0
42.0	1	200,000	200,000
43.0	1	8,607	8,607
43.0	1	100,000	100,000
43.0	1	6,774	6,774
43.0	1	62,012	62,012
	TOTAL	377,393	377,393
43.0	2	989	989
43.0	2	1,126	1,126
	TOTAL	2,115	2,115
43.0	7	1,634	1,634
43.0	7	300,000	300,000
43.0	7	74,788	74,788
43.0	7	22,448	22,448
43.0	7	96,787	96,787
43.0	7	500,000	500,000
43.0	7	20,357	20,357
43.0	7	6,641	6,641
43.0	7	0	105,000
	TOTAL	1,022,688	1,127,688
43.0	9	0	0
43.0	9	0	0
43.0	9	0	0
43.0	9	0	0
	TOTAL	0	0
44.0	1	3,256	3,256
44.0	1	16,500	16,500
44.0	1	3,242	3,242
	TOTAL	23,028	23,028
44.0	2	800	800
44.0	7	9,509	9,509
44.0	7	21,000	21,000
44.0	7	25,000	25,000
44.0	7	25,000	25,000
44.0	7	22,350	22,350
44.0	7	21,700	21,700
	TOTAL	123,597	123,597
43.0	9	0	0
45.0	1	1,760	1,760
45.0	1	7,385	7,385
45.0	1	6,000	6,000
45.0	1	3,940	3,940
45.0	1	4,035	4,035

SOUTH BOSTON FORT POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

SBZONE	LANDUSE	EXISTING1984	PROPOSED2000
	TOTAL	23,12.	26,121
45.0	2	3,300	3,300
45.0	7	600	600
45.0	7	8,510	8,510
45.0	7	6,000	6,000
45.0	7	28,500	28,500
45.0	7	116,200	116,200
45.0	7	67,500	67,500
45.0	7	8,060	8,060
45.0	7	28,500	28,500
45.0	7	0	300,000
45.0	7	88,278	88,278
45.0	7	21,120	21,120
45.0	7	67,500	67,500
45.0	7	44,640	44,640
45.0	7	11,080	11,080
45.0	7	72,000	72,000
45.0	7	74,820	74,820
45.0	7	77,000	77,000
45.0	7	5,700	5,700
45.0	7	5,700	5,700
45.0	7	78,750	78,750
45.0	7	9,748	9,748
	TOTAL	618,531	1,118,531
45.0	9	0	0
45.0	9	0	0
	TOTAL	0	0
46.0	1	1,407	1,407
46.0	1	1,944	1,944
46.0	1	2,189	2,189
46.0	1	1,632	1,632
46.0	1	4,512	4,512
46.0	1	900	900
46.0	1	22,744	22,744
	TOTAL	35,228	35,228
46.0	2	2,805	2,805
46.0	7	45,000	45,000
46.0	7	3,720	3,720
46.0	7	0	250,000
46.0	7	9,775	9,775
46.0	7	29,715	29,715
46.0	7	8,190	8,190
46.0	7	1,383	1,383
46.0	7	1,836	1,836
46.0	7	36,453	36,453
46.0	7	14,937	14,937
46.0	7	44,000	44,000
46.0	7	2,934	2,934
46.0	7	3,720	3,720

SOUTH BOSTON FORT POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

SBZONE	LANDUSE	EXISTING1981	PROPOSED2011
46.0	7	18,401	18,401
46.0	7	22,744	22,744
46.0	7	1,550	1,550
46.0	7	24,576	24,576
46.0	7	6,943	6,943
46.0	7	1,844	1,844
46.0	7	9,020	9,020
46.0	7	7,850	7,850
	TOTAL	292,501	542,501
46.0	9	0	0
46.0	10	612	612
47.0	1	24,080	24,080
47.0	1	2,800	2,800
47.0	1	6,020	6,020
47.0	1	3,840	3,840
47.0	1	1,088	1,088
47.0	1	22,428	22,428
	TOTAL	60,284	60,284
47.0	2	4,020	4,020
47.0	2	6,450	6,450
	TOTAL	10,470	10,470
47.0	7	1,200	1,200
47.0	7	33,660	33,660
47.0	7	61,910	61,910
47.0	7	12,000	12,000
47.0	7	11,340	11,340
47.0	7	2,015	2,015
47.0	7	10,354	10,354
47.0	7	5,600	5,600
47.0	7	2,800	2,800
47.0	7	2,100	2,100
47.0	7	5,840	5,840
	TOTAL	148,719	148,719
48.0	1	9,340	9,340
48.0	1	90,444	90,444
48.0	1	9,820	9,820
48.0	1	2,400	2,400
	TOTAL	112,004	112,004
48.0	7	18,360	18,360
48.0	7	156,244	156,244
48.0	7	85,000	85,000
48.0	7	21,771	21,771
48.0	7	6,720	6,720
48.0	7	81,052	81,052
48.0	7	9,165	9,165
48.0	7	18,414	18,414
	TOTAL	396,726	396,726

SOUTH BOSTON PORT POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

ZONE	LANDUSE	EXISTING1998	PROPOSED2010
49.0	7	101,250	101,250
50.0	1	3,006	3,006
50.0	1	9,550	9,550
TOTAL		12,556	12,556
50.0	2	2,751	2,751
50.0	7	8,803	8,803
50.0	7	111,022	111,022
TOTAL		119,825	119,825
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
51.0	0	0	0
TOTAL		0	0
51.0	1	5,225	5,225
51.0	1	611	611
51.0	1	14,504	14,504
51.0	1	4,346	4,346
51.0	1	1,796	1,796
TOTAL		24,405	24,405
51.0	2	1,612	1,612
51.0	2	5,000	5,000
51.0	2	666	666
51.0	2	3,043	3,043
51.0	2	14,504	14,504
51.0	2	1,058	1,058
TOTAL		25,885	25,885
51.0	7	7,088	7,088

SOUTH BOSTON POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

ZONE	LANDUSE	EXISTING1988	PROJECTION
51.0	7	6,200	6,200
51.0	7	2,001	2,001
51.0	7	6,732	6,732
51.0	7	18,047	18,047
51.0	7	8,063	8,063
51.0	7	38,513	38,513
51.0	7	99,099	99,099
51.0	7	5,841	5,841
51.0	7	9,525	9,525
51.0	7	2,640	2,640
51.0	7	11,615	11,615
51.0	7	11,306	11,306
51.0	7	6,000	6,000
51.0	7	4,631	4,631
51.0	7	5,032	5,032
51.0	7	1,474	1,474
	TOTAL	240,877	240,877
51.0	10	1,000	1,000
51.0	10	781	781
51.0	10	1,000	1,000
51.0	10	782	782
51.0	10	1,054	1,054
51.0	10	780	780
51.0	10	1,054	1,054
51.0	10	1,122	1,122
51.0	10	1,241	1,241
51.0	10	742	742
51.0	10	742	742
51.0	10	758	758
51.0	10	772	772
51.0	10	758	758
51.0	10	758	758
51.0	10	1,000	1,000
51.0	10	805	805
51.0	10	805	805
51.0	10	850	850
51.0	10	1,384	1,384
51.0	10	1,680	1,680
51.0	10	1,240	1,240
51.0	10	758	758
51.0	10	1,122	1,122
51.0	10	1,644	1,644
51.0	10	758	758
51.0	10	850	850
51.0	10	772	772
51.0	10	1,098	1,098
51.0	10	850	850
51.0	10	758	758
51.0	10	2,944	2,944
51.0	10	4,551	4,551
51.0	10	1,258	1,258
51.0	10	886	886
51.0	10	3,000	3,000
51.0	10	805	805
51.0	10	782	782

SOUTH BOSTON - FORT POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

SUBZONE	LANDUSE	EXISTING1988	PROPOSED1...
51.0	10	772	772
51.0	10	1,240	1,240
51.0	10	782	782
51.0	10	782	782
51.0	10	782	782
51.0	10	1,258	1,258
51.0	10	1,258	1,258
51.0	10	730	730
51.0	10	730	730
51.0	10	1,224	1,224
51.0	10	612	612
51.0	10	612	612
51.0	10	2,378	2,378
51.0	10	1,054	1,054
51.0	10	730	730
51.0	10	730	730
51.0	10	782	782
51.0	10	1,098	1,098
51.0	10	742	742
	TOTAL	62,178	62,178
51.0	0	0	0
52.0	0	0	0
52.0	0	0	0
52

SOUTH BOSTON PORT POINT CHANNEL STUD. AREA
LAND USE SQUARE FOOTAGE PER ZONE

SBZONE	LANDUSE	EXISTING1998	PROPOSED2010
52.0	0	0	0
52.0	0	0	0
52.0	0	0	0

SOUTH BOSTON FORT POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

ZONE	LANDUSE	EXISTING(SQ.FT.)	PROPOSED(SQ.FT.)
52.0	2	3,427	3,427
52.0	2	630	630
52.0	2	756	756
52.0	2	1,071	1,071
52.0	2	1,680	1,680
52.0	2	400	400
52.0	2	825	825
52.0	2	3,358	3,358
52.0	2	2,216	2,216
52.0	2	700	700
	TOTAL	79,865	79,865
52.0	3	6,048	6,048
52.0	5	4,380	4,380
52.0	5	0	0
52.0	5	100	100
	TOTAL	4,480	4,480
52.0	7	7,483	7,483
52.0	10	2,314	2,314
52.0	10	5,460	5,460
52.0	10	672	672
52.0	10	684	684
52.0	10	4,330	4,330
52.0	10	911	911
52.0	10	3,420	3,420
52.0	10	778	778
52.0	10	780	780
52.0	10	848	848
52.0	10	848	848
52.0	10	715	715
52.0	10	867	867
52.0	10	2,288	2,288
52.0	10	715	715
52.0	10	684	684
52.0	10	784	784
52.0	10	630	630
52.0	10	0	0
52.0	10	919	919
52.0	10	1,000	1,000
52.0	10	937	937
52.0	10	841	841
52.0	10	630	630
52.0	10	510	510
52.0	10	672	672
52.0	10	852	852
52.0	10	852	852
52.0	10	852	852
52.0	10	510	510
52.0	10	715	715
52.0	10	715	715
52.0	10	2,028	2,028
52.0	10	780	780
52.0	10	926	926

SOUTH BOSTON FORT POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

SBZONE	LANDUSE	EXISTING1991	PROPOSED1...
52.0	10	781	781
52.0	10	780	780
52.0	10	550	550
52.0	10	1,157	1,157
52.0	10	1,000	1,000
52.0	10	1,281	1,281
52.0	10	487	487
52.0	10	583	583
52.0	10	1,128	1,128
52.0	10	764	764
52.0	10	515	515
52.0	10	0	0
52.0	10	653	653
52.0	10	0	0
52.0	10	778	778
52.0	10	2,160	2,160
52.0	10	867	867
52.0	10	876	876
52.0	10	764	764
52.0	10	399	399
52.0	10	1,872	1,872
52.0	10	399	399
52.0	10	0	0
52.0	10	382	382
52.0	10	750	750
52.0	10	654	654
52.0	10	661	661
52.0	10	760	760
52.0	10	612	612
52.0	10	715	715
52.0	10	1,120	1,120
52.0	10	998	998
52.0	10	854	854
52.0	10	854	854
52.0	10	740	740
52.0	10	456	456
52.0	10	384	384
52.0	10	384	384
52.0	10	2,109	2,109
52.0	10	4,380	4,380
52.0	10	928	928
52.0	10	928	928
52.0	10	928	928
52.0	10	928	928
52.0	10	848	848
52.0	10	1,388	1,388
52.0	10	1,622	1,622
52.0	10	1,710	1,710
52.0	10	1,622	1,622
52.0	10	1,768	1,768
52.0	10	561	561
52.0	10	684	684
52.0	10	908	908
52.0	10	948	948
52.0	10	948	948
52.0	10	3,606	3,606

SOUTH BOSTON PORT POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

ZONE	LANDUSE	EXISTING1993	PROPOSED
52.0	10	1,800	1,800
52.0	10	1,500	1,500
52.0	10	3,960	3,960
52.0	10	833	833
52.0	10	833	833
52.0	10	937	937
52.0	10	937	937
52.0	10	937	937
52.0	10	550	550
52.0	10	1,235	1,235
52.0	10	812	812
52.0	10	812	812
52.0	10	3,609	3,609
52.0	10	838	838
52.0	10	766	766
52.0	10	766	766
52.0	10	760	760
52.0	10	833	833
52.0	10	1,508	1,508
52.0	10	733	733
52.0	10	638	638
52.0	10	624	624
52.0	10	624	624
52.0	10	624	624
52.0	10	624	624
52.0	10	1,188	1,188
52.0	10	10,000	10,000
52.0	10	1,596	1,596
52.0	10	841	841
52.0	10	778	778
52.0	10	1,168	1,168
52.0	10	1,168	1,168
52.0	10	667	667
52.0	10	1,128	1,128
52.0	10	1,128	1,128
52.0	10	1,168	1,168
52.0	10	399	399
52.0	10	914	914
52.0	10	1,920	1,920
52.0	10	1,000	1,000
52.0	10	0	0
52.0	10	814	814
52.0	10	802	802
52.0	10	1,128	1,128
52.0	10	715	715
52.0	10	913	913
52.0	10	672	672
52.0	10	700	700
52.0	10	660	660
52.0	10	660	660
52.0	10	700	700
52.0	10	672	672
52.0	10	672	672
52.0	10	660	660
52.0	10	1,168	1,168
52.0	10	684	684

SOUTH BOSTON FORT POINT CHANNEL STUDY AREA
LAND USE SQUARE FOOTAGE PER ZONE

SBZONE	LANDUSE	EXISTING1982	PROPOSED1???
52.0	10	1,182	1,186
52.0	10	753	753
52.0	10	1,149	1,149
52.0	10	1,120	1,120
52.0	10	806	806
52.0	10	1,120	1,120
52.0	10	806	806
52.0	10	916	916
52.0	10	907	907
52.0	10	914	914
52.0	10	801	801
52.0	10	926	926
52.0	10	1,554	1,554
52.0	10	1,554	1,554
52.0	10	2,049	2,049
52.0	10	1,554	1,554
52.0	10	578	578
52.0	10	630	630
52.0	10	898	898
52.0	10	898	898
52.0	10	7,539	7,539
52.0	10	510	510
52.0	10	1,554	1,554
52.0	10	578	578
52.0	10	1,985	1,985
52.0	10	2,421	2,421
52.0	10	578	578
52.0	10	6,151	6,151
52.0	10	734	734
52.0	10	510	510
52.0	10	734	734
52.0	10	760	760
52.0	10	1,188	1,188
52.0	10	1,120	1,120
52.0	10	1,157	1,157
52.0	10	1,157	1,157
52.0	10	924	924
52.0	10	924	924
52.0	10	924	924
52.0	10	782	782
52.0	10	782	782
52.0	10	782	782
52.0	10	374	374
52.0	10	636	636
52.0	10	734	734
52.0	10	0	0
52.0	10	1,572	1,572
52.0	10	636	636
52.0	10	1,120	1,120
52.0	10	1,200	1,200
52.0	10	2,372	2,372
52.0	10	569	569
52.0	10	3,163	3,163
52.0	10	2,720	2,720
52.0	10	1,512	1,512
52.0	10	684	684

ZONE	LANDUSE	EXISTING1988	PROPOSED2010
52.0	10	784	784
52.0	10	784	784
52.0	10	784	784
52.0	10	784	784
52.0	10	1,128	1,128
52.0	10	1,128	1,128
52.0	10	784	784
52.0	10	784	784
52.0	10	784	784
52.0	10	3,872	3,872
52.0	10	6,716	6,716
52.0	10	3,296	3,296
52.0	10	740	740
52.0	10	740	740
52.0	10	1,580	1,580
52.0	10	1,214	1,214
52.0	10	974	974
52.0	10	974	974
52.0	10	1,088	1,088
52.0	10	1,088	1,088
52.0	10	2,981	2,981
52.0	10	1,388	1,388
52.0	10	1,806	1,806
52.0	10	7,180	7,180
52.0	10	878	878
52.0	10	948	948
52.0	10	1,078	1,078
52.0	10	930	930
52.0	10	1,124	1,124
52.0	10	1,068	1,068
52.0	10	3,358	3,358
52.0	10	1,470	1,470
52.0	10	808	808
52.0	10	896	896
52.0	10	948	948
52.0	10	0	0
52.0	10	808	808
52.0	10	808	808
52.0	10	948	948
52.0	10	948	948
52.0	10	2,028	2,028
52.0	10	1,288	1,288
52.0	10	2,700	2,700
52.0	10	838	838
52.0	10	2,505	2,505
TOTAL		302,760	302,760

[illegible]

[illegible]

TOTAL SQUARE FOOTAGE BY
LAND USE IN THE STUDY AREA

LANDUSE	EXISTING1986	PROPOSED2010
1	3,539,195	12,726,409
2	456,415	1,095,374
3	6,048	6,048
4	24,649	24,649
5	582,130	1,393,180
6	97,000	2,318,350
7	11,925,851	12,360,229
8	0	990,000
9	0	0
10	489,153	3,629,153
11	182,564	232,564
TOTALS	17,306,055	34,774,956

APPENDIX B

AGENCY REVIEW OF FORT POINT CHANNEL AREA LAND USE FORECASTS

EXCERPTS FROM CSI MEMO #21, CA/THT PROJECT

NOVEMBER 15, 1988

Memorandum

Cambridge Systematics, Inc.

MEMO TO: Central Artery Project Staff

FROM: Larry Fabian

DATE: November 15, 1988

MEMO NO.: CS-21

RE: External Review of Land Use Projection

This memorandum supersedes CS-20.

Contacts with the Boston Redevelopment Authority to obtain BRA comments and inputs on the land use database (base year and projections) for the various subzones of the Study Area within the city of Boston were initially made in the fall of 1987 by Tom Lisco of CTPS. The BRA Director's office designated Bill Whitney, Director of Development, as the contact person, who indicated that his department's orientation is toward specific project review with a time horizon not extending beyond three years, for the most part.

Some of Whitney's staff visited CS facilities and were given a hands-on demonstration of the CA computerized database. Whitney and his staff requested listings of individual development projects used in our projections. Substantial delays were incurred before they then requested printouts without our coding system (i.e. land use as "retail" instead of "02"; status "review" instead of "03"). These were submitted in May, 1988. Still no responses were forthcoming, and Whitney indicated that the BRA Research Department should become involved.

The Research Department's longer-range perspective puts it in a better position to react to our projections. Largely relying on the support of Research Director Alex Ganz and the efforts of John Avault and Greg Perkins, a series of meetings was scheduled, each to review one or more of the planning districts into which the database is organized.

Similar meetings were also held with staff of the Cambridge and Somerville Community Departments to review that district. Following is a summary of these meetings.

Industrial South Boston: October 4, 1988

BRA staff present: Tom Ennen, Felix DiAmesti, Larry Koff, John Avault, Greg Perkins (also Adel Foz of Massport)

Zone 233F: Reduce housing to 500,000 sf in 2010, add the 300,000 sf to office

Zone 233G: OK

Zone 72A: OK

Zones 72B&C: OK

Zone 238A: Conversion industrial to office on Binford Street completed. Two adjacent vacant buildings to be rehab'd.

Add 100,000 sf to the post office space after 1995

Zone 238B: Correct drop in 1995.

Zones 70B&C: OK

Zone 70D: Convert industrial space to 50 du by 1995.

Zone 70E: Add 100 du by 1995

Zone 67A: Add 150,000 sf office and 100,000 sf industrial. Status: 05

Zone 67B: Add 500 du along water (to be developed as a park) after 1995

Zone 70A: 435 Summer St: 180,000 sf office in new bldg. Totals OK

Zone 237D*: Demo 300,000 sf industrial for the tunnel, add 500,000 office after 1995

Zone 237B*: Add after 1995 400,000 sf office, 400,000 sf industrial, and 15,000 sf retail

Zone 237E*: Check occupancy rates vs. totals. Add 450,000 sf more office and 50,000 sf retail after 1995

Zone 233E*: Add 80,000 sf office by 1995; 175,000 sf more after 1995

Zone 233D: OK

Zone 237A*: 1995 total should be 500,000 sf office. 2010 should total 1.1 msf office and 100,000 sf retail

Zone 233J*: 1995 total should be 500,000 sf office. 2010: additional 500,000 "commercial": hotel, retail, etc.

Zone 233I: OK

Zone 233H: Add 500,000 sf housing from office total

Zone 233C: OK

Zones 233A&B: Limit 2010 total to 4.5 msf. Keep full hotel figures.

* Per telephone conversation with Adel Foz October 17, 1988.

APPENDIX C

YEAR 2010 PERSON TO VEHICLE TRIP FACTORS

EXCERPTS FROM CSI MEMO #10 (UPDATED), CA/THT PROJECT

DECEMBER 7, 1988

V. Person Trip to Vehicle Trip Conversion

The trip tables that are the product of this process are vehicle trip tables; they are intended to be assigned directly on a highway network to produce traffic volume estimates. The trip generation rates used are person trip generation rates, a necessary step because of the high number of trips made by transit, walking, and other modes in the study area and the differences within the study area in characteristics such as transit access, parking availability, and others. Thus a means to convert the person trips generated in each zone to vehicle trips is needed. This process, which is performed using a specially designed Lotus 1-2-3 spreadsheet, is described in this section.

In general, vehicle trips consist of person trips made by the auto driver, truck driver, and taxi passenger modes. The conversion process must eliminate trips made by all other modes such as walking, transit, and auto passenger. Thus assumptions concerning the mode shares of the various modes (including walking) and automobile occupancy must be made. These factors can vary greatly depending on trip purpose, and so total trips must be subdivided into the various purposes before such factors can be applied.

The trips are disaggregated based on the percentage of trips of each purpose in the CTPS model for the appropriate scenario (e.g. 1987 no build) for each subzone. For example, if 80% of the trips in the CTPS model classified as nonwork productions for zone 1 were HBO productions, then 80% of the nonwork productions generated in zone 1 using the CA/THC trip generation rates would be classified as HBO and 20% as HBS. At the end of the disaggregation process, attractions and productions for each of the four trip purposes for each subzone are known.

The next step is to eliminate walk trips from the totals. For the purposes of this analysis, walk trips also include trips made by bicycles and other nonmotorized transportation modes. Walk percentages were estimated for each purpose for each of two types of zones: "intown" and other. In general, walk percentages are slightly higher in "intown" zones, which are primarily located in "Boston proper" (the peninsula east of Massachusetts Avenue) but also include certain other zones with high percentages of walk trips (e.g. M.I.T.). For HBW attractions, walk percentages were calculated on a zone-specific basis from 1980 U.S. Census Journey-to-Work data. The walk percentages are applied to the person trip totals by zone and purpose to yield nonwalk person trips. The same walk percentages are used for all scenarios. The non-zone specific walk percentages are ("intown" percentages listed first):

HBW productions: 0.70, 0.75
HBO productions: 0.60, 0.65
HBO attractions: 0.75, 0.80
HBS productions and attractions: 0.50, 0.50
NHB productions and attractions: 0.50, 0.55

At this point, only transit and automobile trips remain in the person trip totals. To separate the transit trips from the auto trips, the transit mode shares from the CTPS model are used. These were made available by CTPS for each of the eight trip purposes (four for productions, four for attractions) for the 1987 no build, 2010 no build, and 2010 full build scenarios. The 2010 full build mode shares are used for the 1995 half build scenario except in areas where future transit improvements assumed in the CTPS model are not expected to be completed by 1995. In these zones the 1987 no build mode shares are used. These areas include South Boston, where the proposed service to the waterfront area is not expected to be complete by 1995, and Somerville, where the Green line extension to Ball Square is not scheduled for completion by 1995. The transit mode shares for each subzone and trip purpose are multiplied by the corresponding person trip totals, and the resulting transit trips are subtracted from the person trips. This leaves auto person trips for each zone.

The next task is to determine the number of automobile vehicle trips corresponding to the auto person trips for each zone. This is done using the automobile occupancy factors (number of persons per automobile) for the zones and trip purposes. The occupancy factors for work trips are from the 1980 U.S. Census Journey-to-Work data and were determined for each zone by CTPS. For the three nonwork purposes, only areawide averages were available; these were obtained from the 1977 Boston Central Artery Origin-Destination Study by CTPS. These factors are:

HBO: 1.72
HBS: 1.61
NHB: 1.31

The same factors are applied to attractions and productions for each trip purpose. The occupancy factors are divided into the auto person trips for each subzone to yield auto vehicle trips.

At this point the vehicle trip calculation for each zone is complete. The trips for the eight purposes are summed for each zone, and the truck, taxi, and external vehicle trips are added to the auto vehicle trips. The total is then used in the preparation of the vehicle trip tables themselves, which is described in the next section.

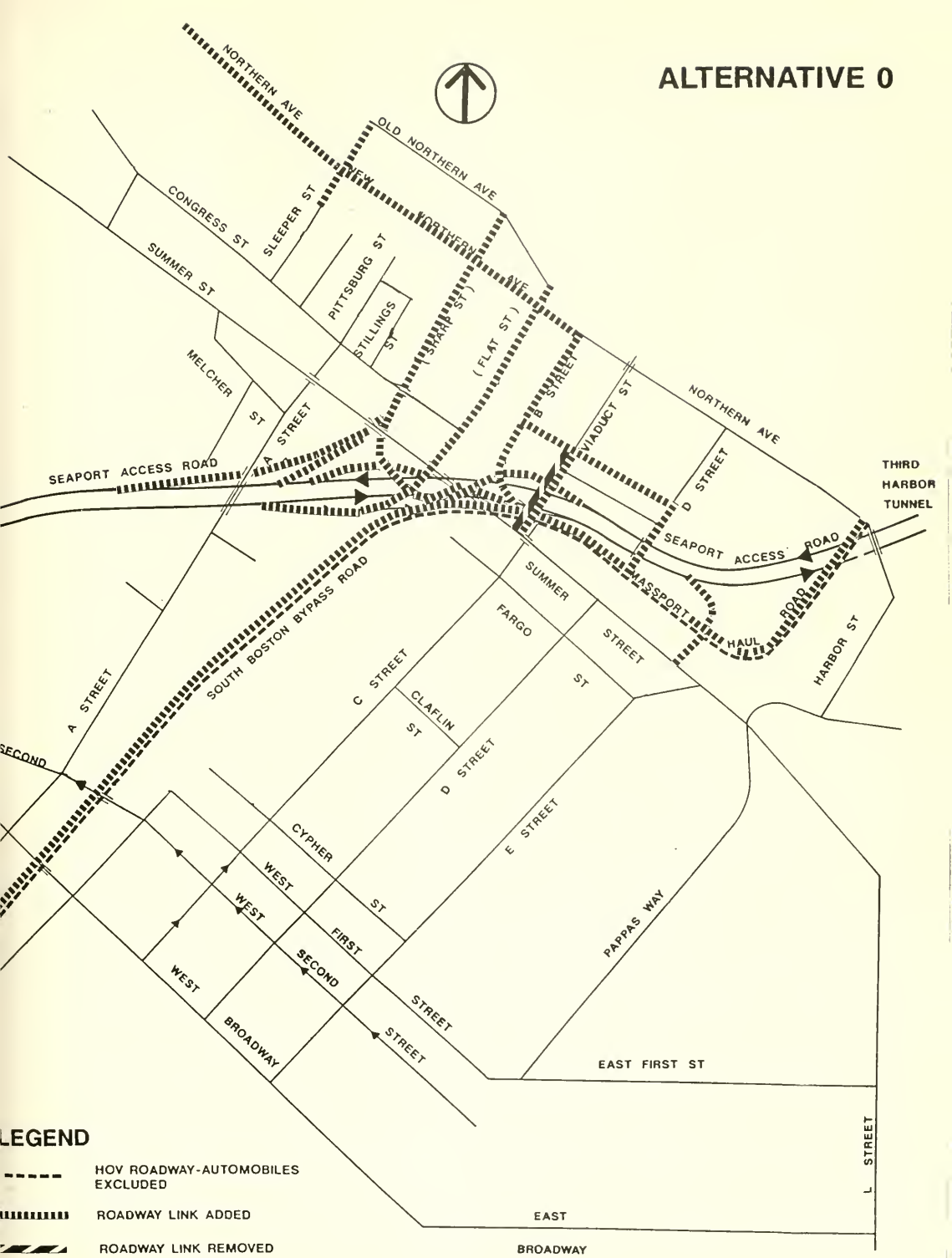
An adjustment to 2010 vehicle trip generation that is calculated at this point but not applied until later is an adjustment to account for the parking freeze currently enforced in Boston proper. This adjustment reflects the fact that because of the freeze, parking supply may be insufficient to accommodate demand by 2010, and some auto trips may have to be made by other modes or combined with other trips. For work trips, the adjustment for each subzone is equal to 20% of the growth from 1987 to 2010 in HBW auto vehicle trip attractions; the new adjusted total is equal to the original total minus the adjustment. For nonwork trips the adjustment is areawide and is calculated based on a limit of 25% growth in nonwork auto vehicle trip attractions (sum of HBO, HBS, and NHB attractions and NHB productions). This limit is applied to the entire Boston Proper area (CTPS zones 1 through 54). The current totals do not exceed this limit--implying no adjustment for nonwork trips--but

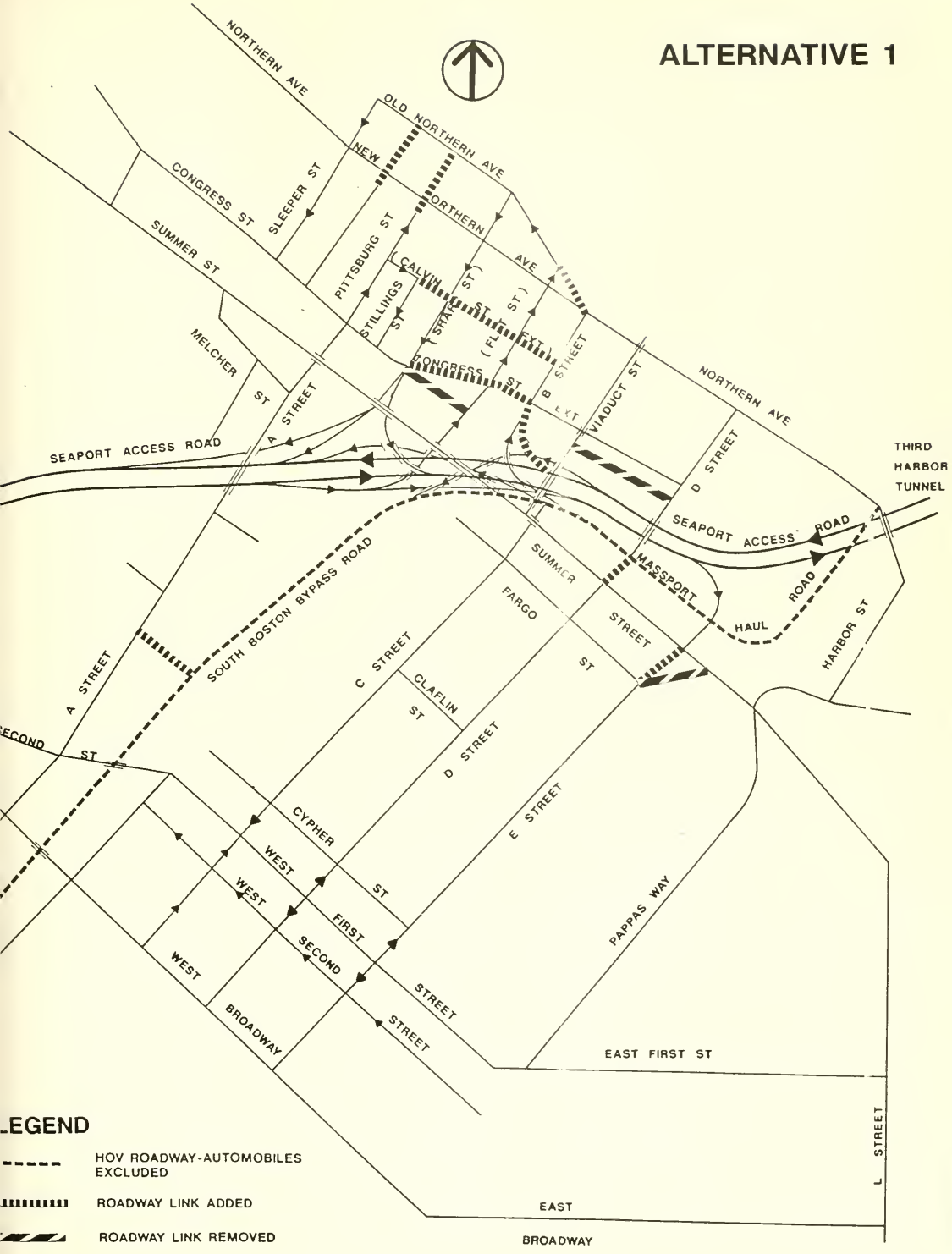
if assumptions about future growth are revised, this adjustment could come into play. The overall adjustment (work and nonwork) is calculated as the ratio of adjusted total vehicle trips (including productions and truck, taxi, and external vehicle trips) to unadjusted total vehicle trips, and, to reiterate, it is not applied at this point.

Another output of this process is the calculation of the ratios of the calculated work and nonwork vehicle trips to person trips for each subzone. These ratios are used later in the disaggregation of CTPS trip tables to the CA/THC zone system. These ratios are referred to as "PTVT" conversion factors; the process concerning their use is described in the next section.

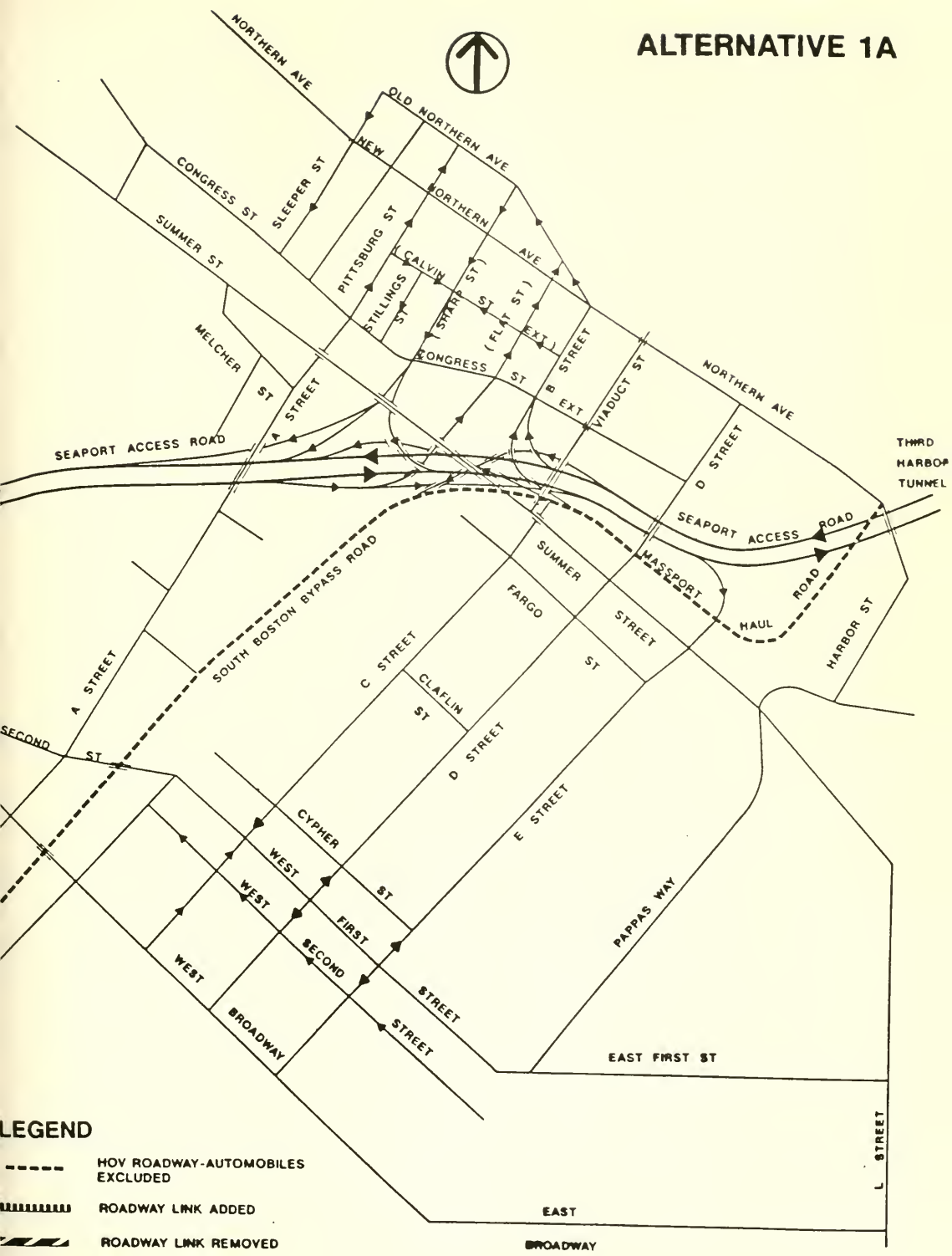
APPENDIX D

FORT POINT CHANNEL AREA
2010 LOCAL ROADWAY NETWORK ALTERNATIVES


ALTERNATIVE 0
NORTHERN AVE
OLD NORTHERN AVE
NEW NORTHERN AVE
CONGRESS ST
SLEEPER ST
SUMMER ST
PITTSBURG ST
STILLINGS ST
(SHARP ST)
(FLAT ST)
MELCHER ST
A STREET
B STREET
VIADUCT ST
NORTHERN AVE
D STREET
THIRD HARBOR TUNNEL
SEAPORT ACCESS ROAD
SEAPORT ACCESS ROAD
SOUTH BOSTON BYPASS ROAD
SUMMER STREET
FARGO ST
MASSPORT HAUL ROAD
HARBOR ST
A STREET
C STREET
CLAFLIN ST
D STREET
E STREET
SECOND
CYPHER ST
WEST FIRST STREET
WEST SECOND STREET
WEST BROADWAY
PAPPAS WAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED


ALTERNATIVE 1
NORTHERN AVE
OLD NORTHERN AVE
NEW NORTHERN AVE
CONGRESS ST
SLEEPER ST
SUMMER ST
PITTSBURG ST
STILLINGS ST
CALVIN ST
(STATE ST)
(FLEET ST)
CONGRESS ST
B STREET EXT
VIADUCT ST
NORTHERN AVE
MELCHER ST
A STREET
SEAPORT ACCESS ROAD
THIRD HARBOR TUNNEL
D STREET
SEAPORT ACCESS ROAD
SUMMER STREET
FARGO ST
MASSPORT HAUL ROAD
HARBOR ST
SOUTH BOSTON BYPASS ROAD
A STREET
C STREET
CLAFLIN ST
D STREET
E STREET
SECOND ST
CYPHER ST
WEST FIRST STREET
WEST SECOND STREET
WEST BROADWAY
PAPPAS WAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

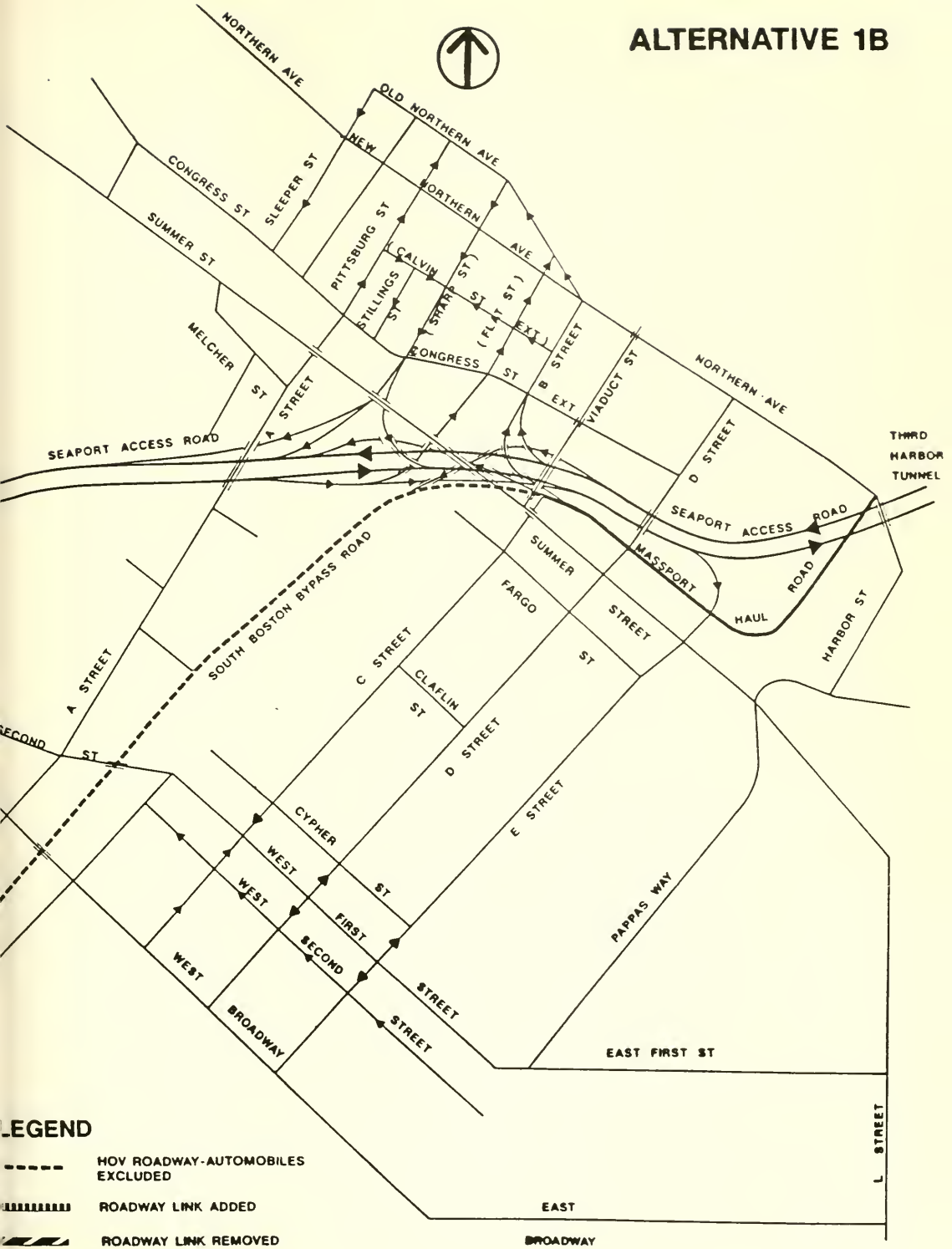
ALTERNATIVE 1A



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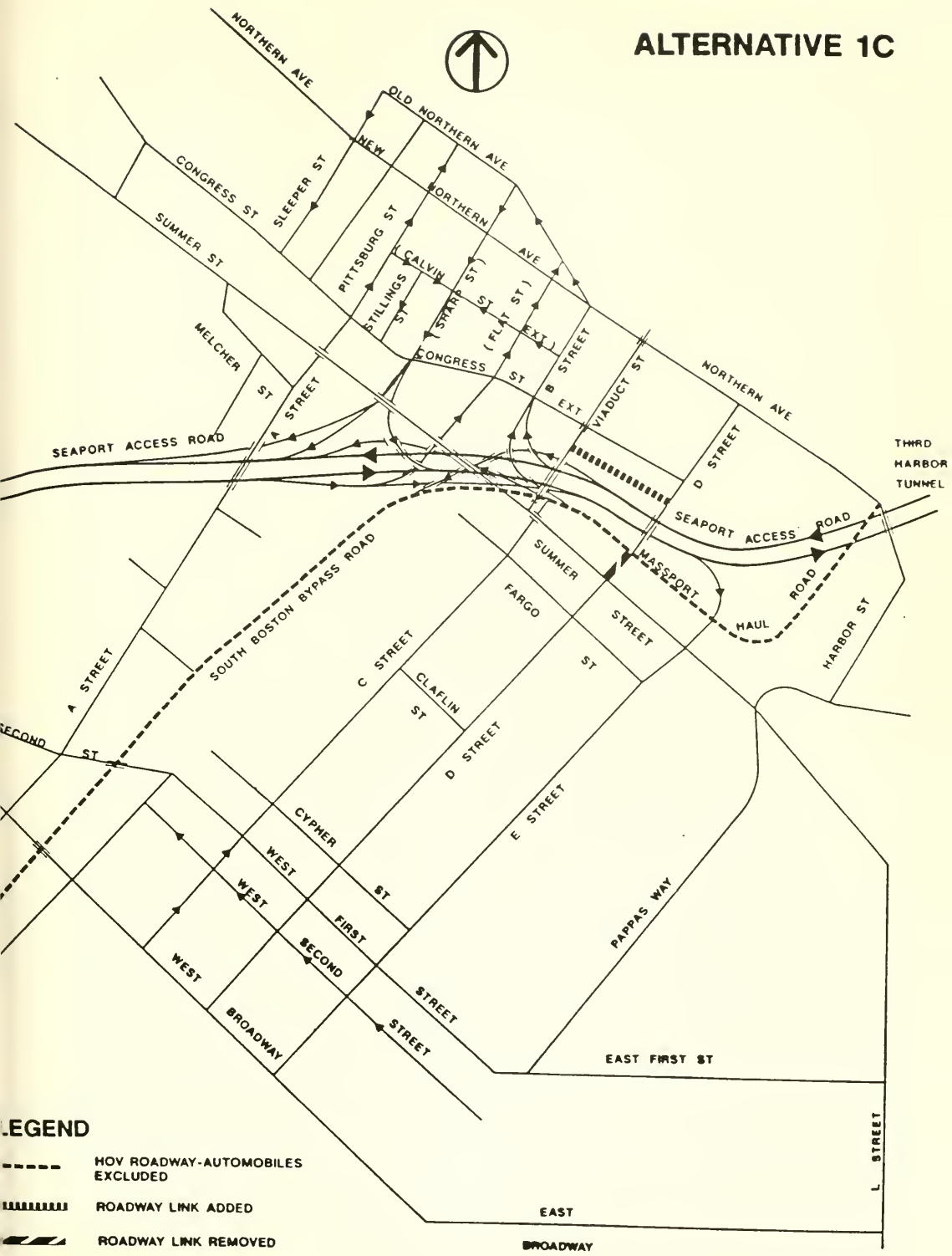
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ALTERNATIVE 1B

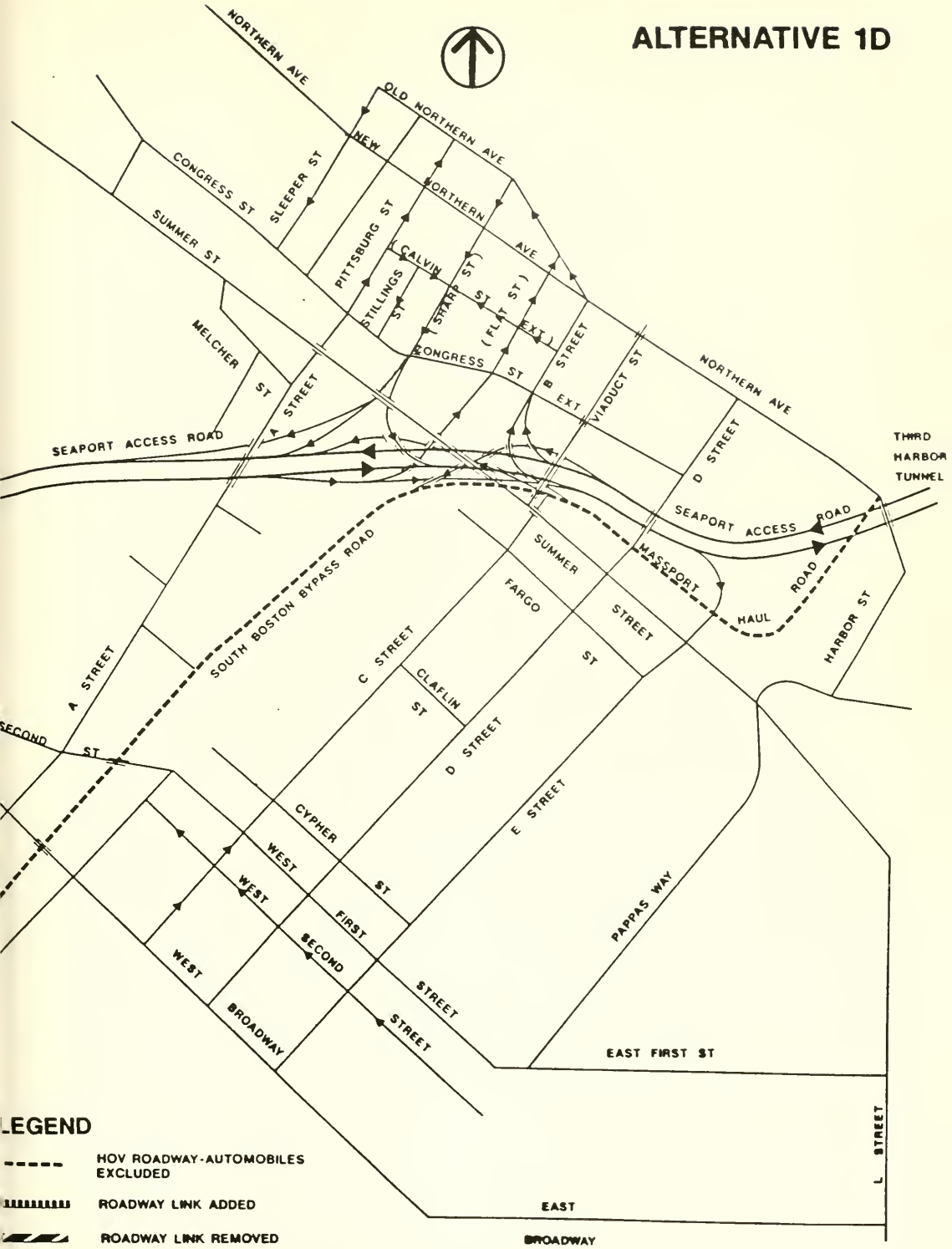


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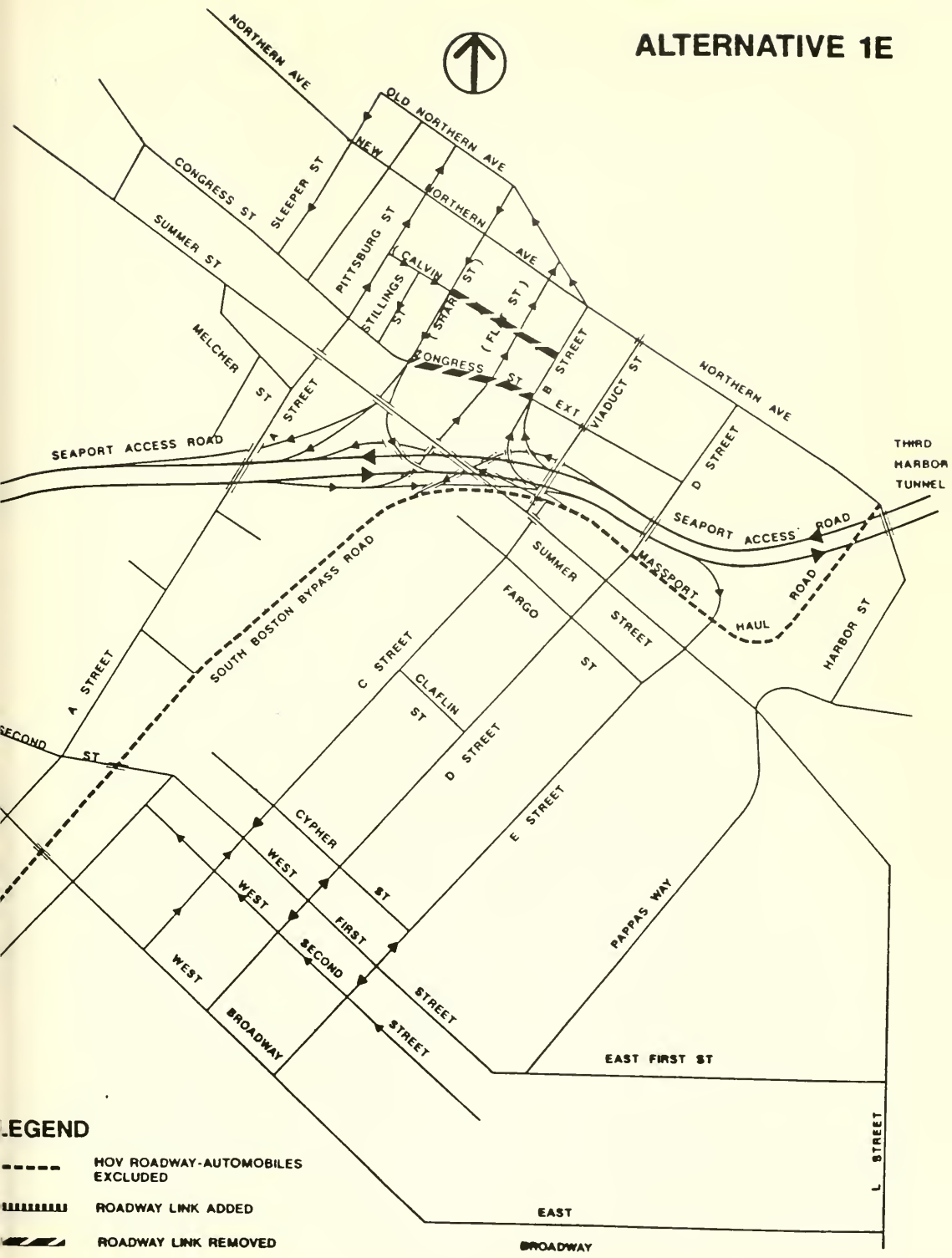

ALTERNATIVE 1C
NORTHERN AVE
OLD NORTHERN AVE
NEW NORTHERN AVE
CONGRESS ST
SLEEPER ST
SUMMER ST
PITTSBURG ST
STILLINGS ST
CALVIN ST
SHARP ST
FLAT ST
EXT
B STREET
EXT
CONGRESS ST
MELCHER ST
A STREET
VIADUCT ST
NORTHERN AVE
D STREET
SEAPORT ACCESS ROAD
THIRD HARBOR TUNNEL
SEAPORT ACCESS ROAD
SUMMER STREET
MASSPORT HAUL ROAD
HARBOR ST
SOUTH BOSTON BYPASS ROAD
A STREET
C STREET
CLAFLIN ST
FARGO ST
D STREET
E STREET
SECOND ST
CYPHER ST
WEST FIRST ST
WEST SECOND STREET
WEST BROADWAY
PAPPAS WAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

ALTERNATIVE 1D

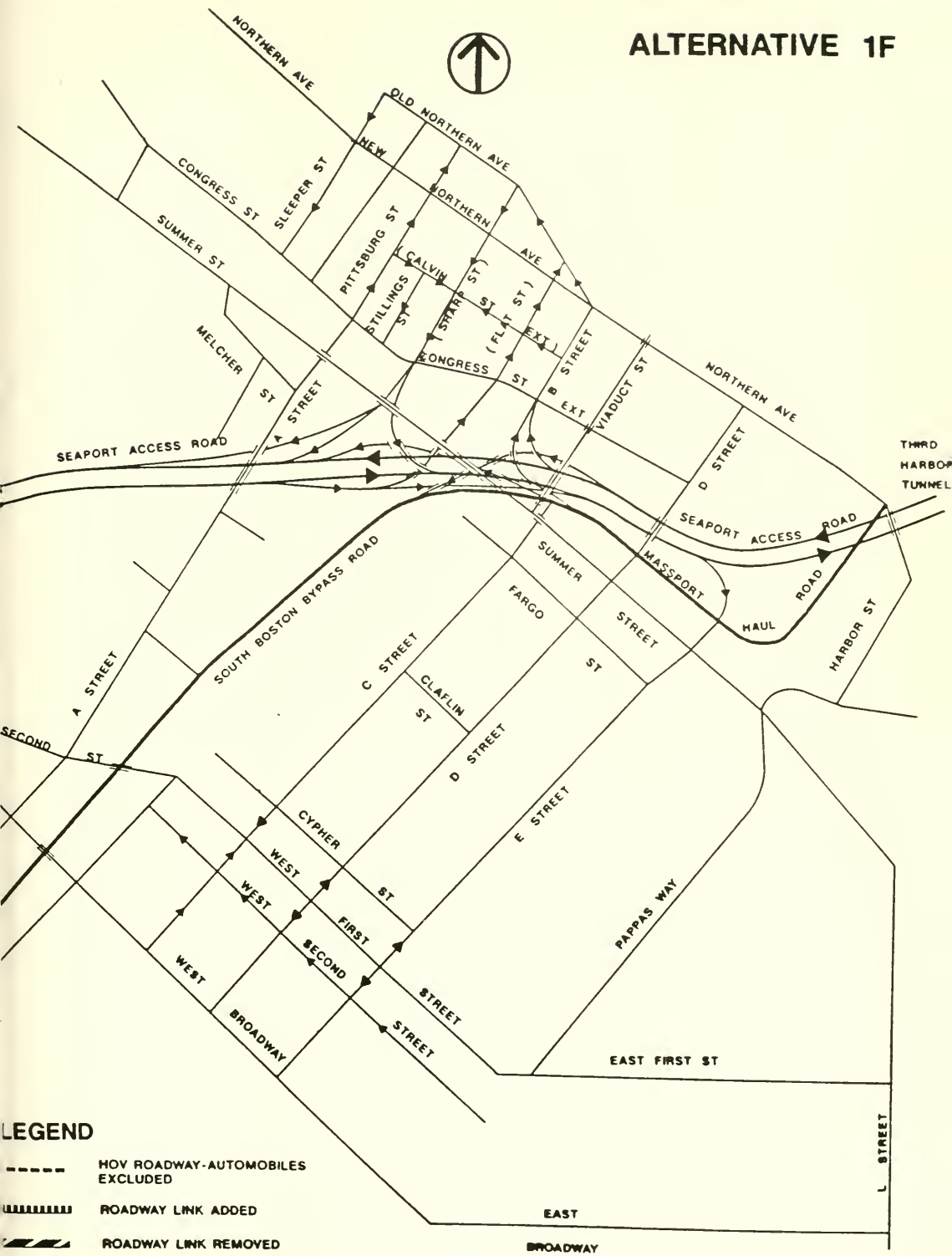


LEGEND

- HOV ROADWAY-AUTOMOBILES EXCLUDED
- ROADWAY LINK ADDED
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ALTERNATIVE 1E
NORTHERN AVE
OLD NORTHERN AVE
NEW NORTHERN AVE
CONGRESS ST
SLEEPER ST
SUMMER ST
PITTSBURG ST
STILLINGS ST
CALVIN ST
SHARI ST
(FL ST)
CONGRESS ST
B STREET
B EXT
VIADUCT ST
NORTHERN AVE
MELCHER ST
A STREET
SEAPORT ACCESS ROAD
D STREET
THIRD HARBOR TUNNEL
SEAPORT ACCESS ROAD
SOUTH BOSTON BYPASS ROAD
SUMMER STREET
FARGO ST
MASSPORT HAUL ROAD
HARBOR ST
A STREET
C STREET
CLAFLIN ST
SECOND ST
D STREET
E STREET
CYPHER ST
WEST FIRST STREET
WEST SECOND STREET
WEST BROADWAY
PAPPAS WAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

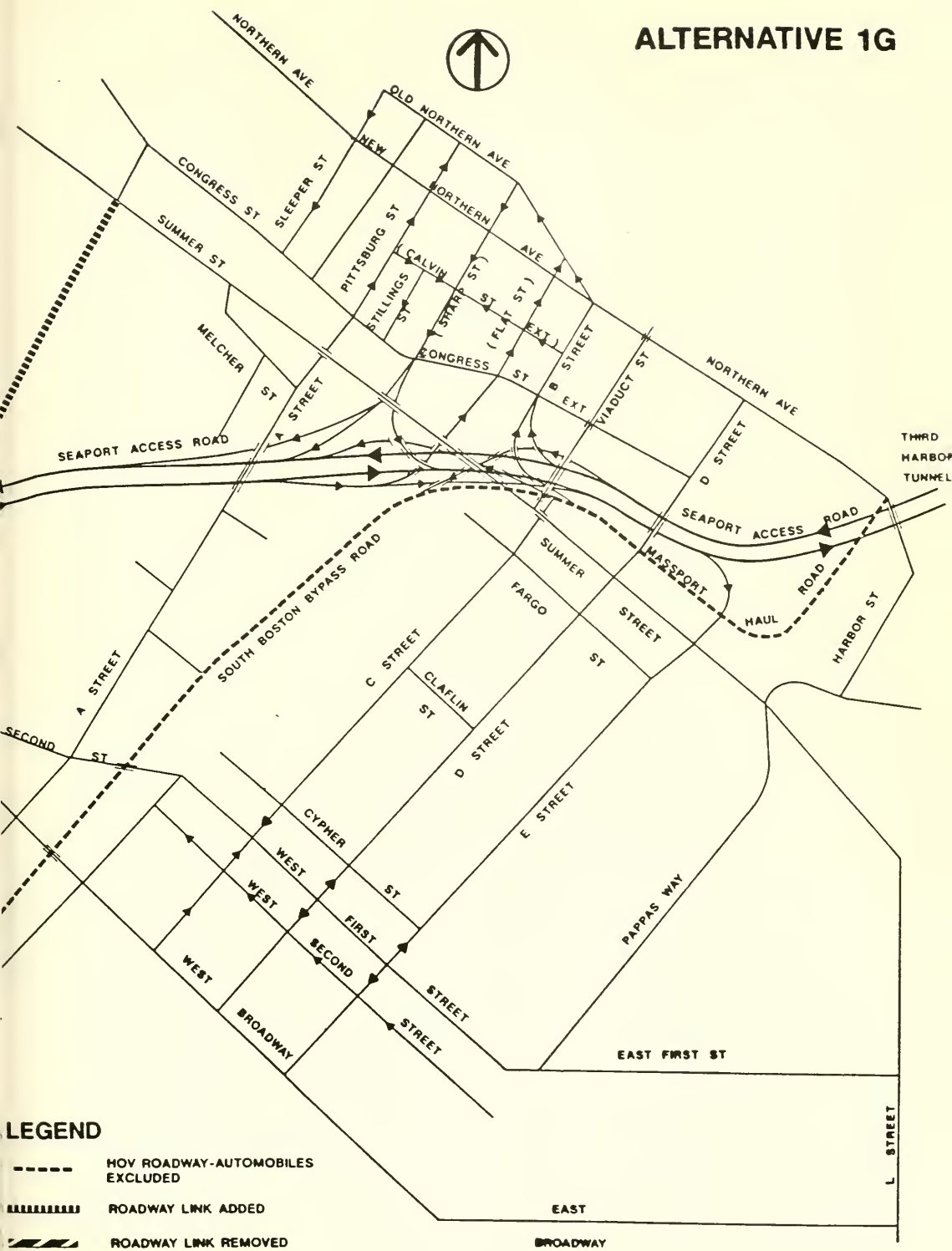
ALTERNATIVE 1F



LEGEND

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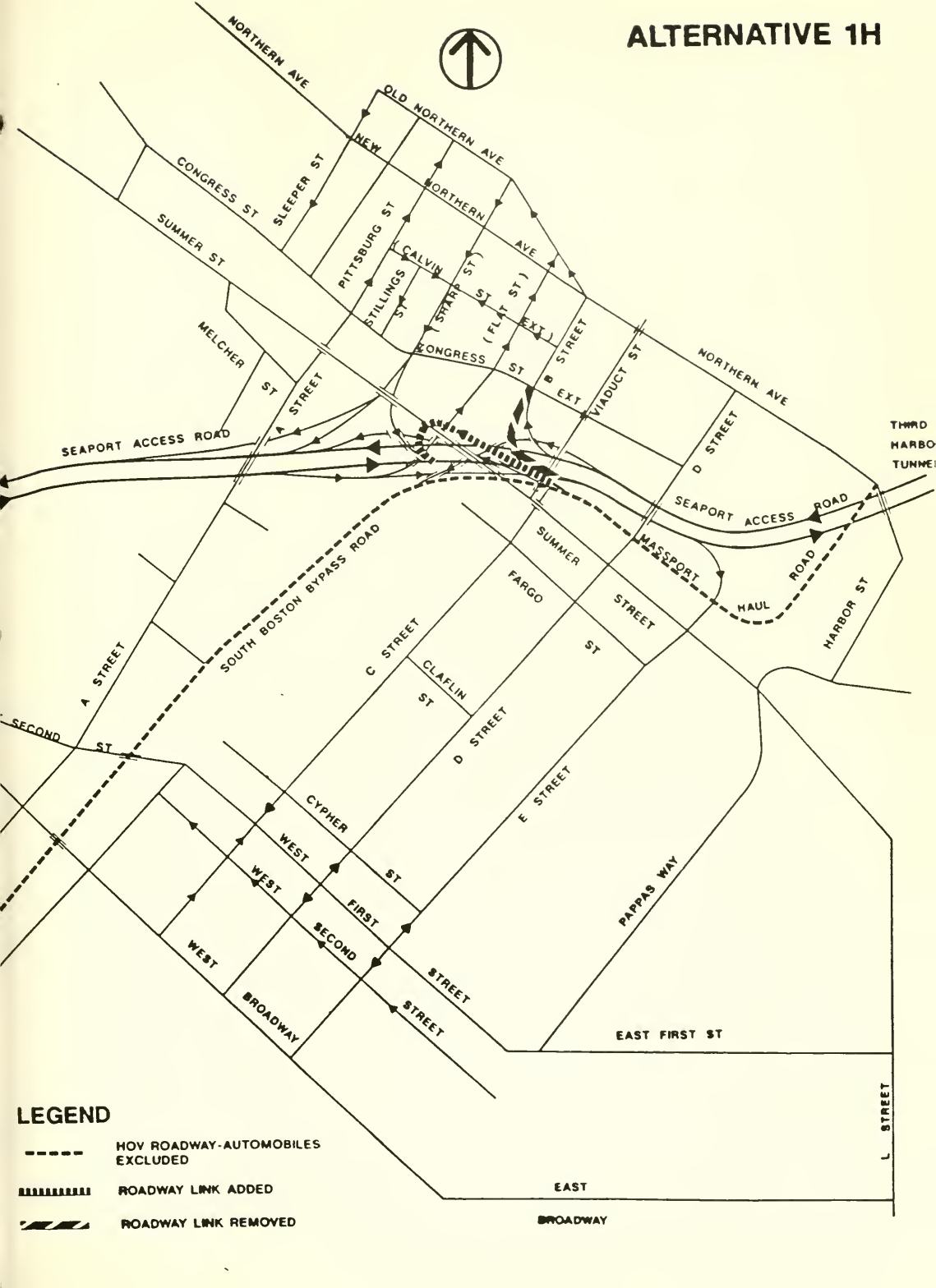
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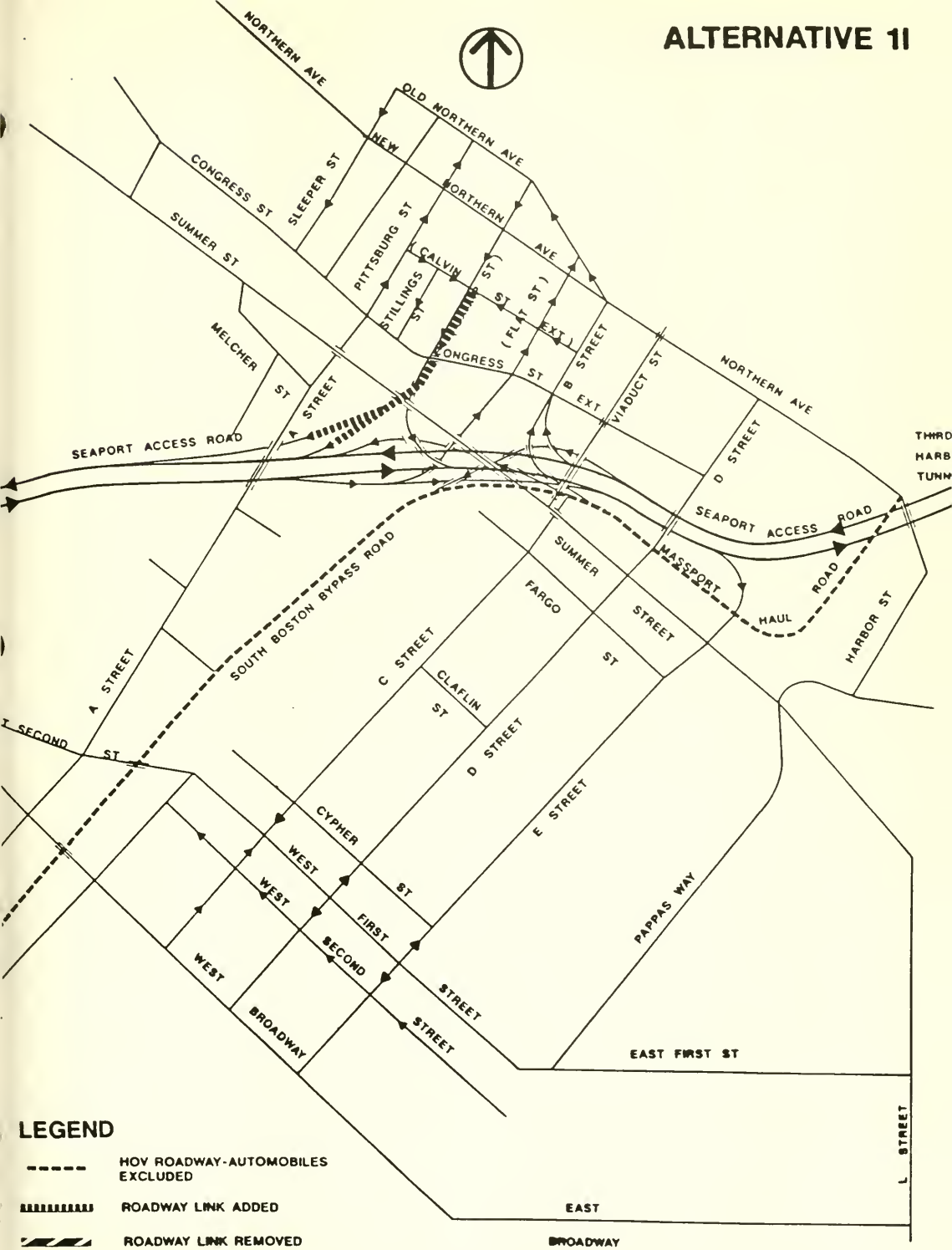
ALTERNATIVE 1H



LEGEND

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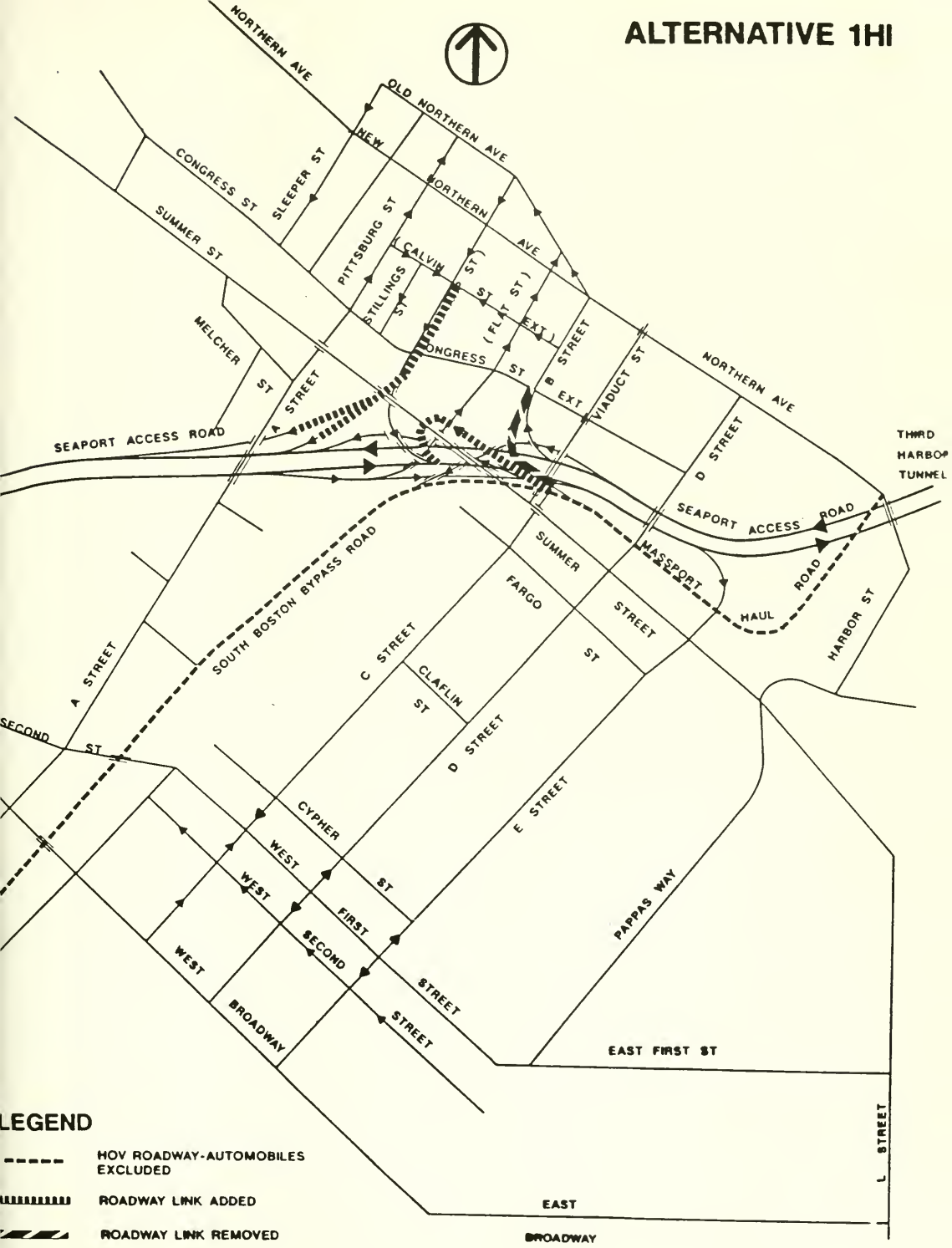
ALTERNATIVE 11



LEGEND

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ALTERNATIVE 1HI



LEGEND

- HOV ROADWAY-AUTOMOBILES EXCLUDED
- ROADWAY LINK ADDED
- ROADWAY LINK REMOVED



BOSTON
TRANSPORTATION
DEPARTMENT

FORT POINT CHANNEL/SOUTH BOSTON
ROADWAY IMPROVEMENTS STUDY

TECHNICAL MEMORANDUM
2.2

IDENTIFICATION AND EVALUATION OF FORT POINT CHANNEL ROADWAY IMPROVEMENT OPTIONS



FAY, SPOFFORD & THORNDIKE, INC. ENGINEERS

W SPOFFORD & THORNDIKE INC
ENGINEERS

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OVERVIEW

This is the fourth in a series of eight Technical Memoranda being prepared for the City of Boston Transportation Department under a Public Works Economic Development (PWED) grant from the Commonwealth of Massachusetts to address planning issues associated with the Fort Point Channel/South Boston Roadway Improvements Study. Fay, Spofford & Thorndike, Inc. (FST) is the lead firm in a team of six consultants who are preparing this study. The other members of the Study Team include:

- Cambridge Systematics, Inc. - Computerized Traffic Forecasts
- The BSC Group - Base Mapping and Utilities
- Lozano, White and Associates, Inc. - Streetscape Issues
- David Dixon & Associates - Urban Design and Land Use Issues
- Facilities Data, Inc. - Traffic Data and Accident Studies

Fay, Spofford & Thorndike, Inc., on behalf of the Study Team, prepared this Technical Memorandum to document the identification and evaluation of local roadway alternatives within the Fort Point Channel Study area using traffic forecasts of several alternative futures in South Boston prepared by Cambridge Systematics, Inc. For context purposes, this Technical Memorandum also highlights existing traffic conditions in the South Boston/Fort Point Channel study area.

SUMMARY OF MAJOR FINDINGS

Overall Traffic

Features associated with Alternative 1HI -- the local roadway "full build" alternative illustrated on P. 71 and described on Pp. 72 - 77 of this Technical Memorandum -- are most effective at reducing congestion in the Fort Point Channel/South Boston study area. In total, Alternative 1HI is projected to reduce vehicle miles of congestion in the year 2010 by 24 percent during the morning peak hour and by nearly 40 percent during the afternoon peak hour (see Table 2.2.12) compared to Alternative 0, the "base condition" alternative.

Year 2010 traffic operations to and from the study area, given development quantities projected as of October, 1988 assumed in this report, will be at or approaching the capacity of roadways at the cordon during peak periods. For example, with Alternative 1HI, it is projected that the roadways and ramps serving the Fort Point Channel area cordon, in total, will be operating at 95 percent of their combined inbound capacity during the morning peak hour; 108 percent of their combined outbound capacity (i.e., over capacity) during the afternoon peak hour. This contrasts with a roadway system that in 1988 was operating, overall, at 66-69 percent of capacity during the AM and PM peak hours.

While land use projections are not static and continue to evolve, basic findings contained in this report regarding the type and sizing of roadways will not be significantly affected by modest changes in land use assumptions.

The Massport Haul Road will not function adequately with a two-lane cross-section if opened to general traffic.

Significant transit/HOV (high occupancy vehicle) infrastructure investments as well as parking supply constraints will be needed in the Fort Point Channel/South Boston area in order to create a projected transit/HOV mode share of 55% north of Summer Street and 34% south of Summer Street during peak travel hours. Without major transit/HOV systems and incentives, congestion is expected to be much higher than reported in this study.

Fort Point Channel Bridges

Due to constraints on capacity imposed on the downtown Boston side of the bridges, projected year 2010 traffic volumes on the Northern Avenue, Congress Street, and Summer Street bridges in the peak travel direction are expected to be relatively insensitive to changes in the local street system in the Fort Point Channel area. Except in the case where a lower transit/HOV share was assumed (Alternative 1A was projected to increase bridge volume demands by 27 percent), cordon inbound bridge volumes by alternative varied less than 2 percent during the morning or evening peak hours.

Projected off-peak direction peak hour volumes on the bridges were found to be sensitive to changes in the Fort Point Channel/South Boston roadway system. In particular, re-opening Dorchester Avenue to general traffic and the absence of the Congress Street/Calvin Place Extensions tend to reduce off-peak directional travel of the bridges. Re-opening Dorchester Avenue to general traffic appears to attract downtown-oriented vehicle trips out of the Fort Point Channel area. Without the Congress Street/ Calvin Place Extensions, outbound traffic appears to be oriented more towards the South Boston residential roadways due to congestion on the Northern Avenue and Summer Street bridges.

Seaport Access Road Ramps

Projected Seaport Access Road ramp volumes tend to be lower without the Congress Street/Calvin Place Extensions, because traffic will tend to use local routes in South Boston (e.g., A Street/L Street) rather than the ramps if the Congress Street/Calvin Place Extensions are not provided. Proposed additional street pattern changes in the area of West First and West Second Street area increase projected traffic volumes on the ramps more than any other single element.

All other things being equal, Alternatives 1C (without a D Street Connection), 1D (without proposed new South Boston neighborhood traffic controls), 1E (without Congress Street/Calvin Place Extensions), and 1F

(South Boston Bypass Road/Massport Haul Road open to general traffic) reduce projected Seaport Access Road ramp volumes compared to Alternative 0. Of these four alternatives, only Alternatives 1C and 1D (the two alternatives without neighborhood traffic controls on C, D, and E Streets) are expected to result in increased traffic volumes on South Boston residential streets (excluding the South Boston Bypass Road) compared to Alternative 0. While Alternatives 1E (without the Congress/Calvin Place Extensions) and 1F (with the Massport Haul Road and South Boston Bypass Road open to general traffic) have projected lower ramp volumes. These lower ramp volumes are more than offset in projected higher traffic volumes on A Street in the case of Alternative 1E, and the South Boston Bypass Road in the case of Alternative 1F.

Alternative 1HI, as the alternative with the most outbound ramp capacity, tends to carry the highest ramp volumes.

South Boston Residential Streets

All other things being equal, re-opening Dorchester Avenue to general traffic appears to benefit the South Boston residential streets the most compared to Alternative 0.

Fort Point Channel Wharf Area

- Proposed new cross-streets, widened and improved sidewalks, one-way street patterns, and street reconstructions are expected to improve safety for both pedestrians and motorists using Sleeper, Pittsburgh, Farnsworth, and Stillings Streets. Proposed new and widened sidewalks on Sleeper and Pittsburgh Street, coupled with new and improved lighting and pedestrian amenities and are expected to enhance the quality of this historic area. Particularly during the afternoon peak hour, traffic volumes on Pittsburgh and Sleeper Streets are reduced considerably with Alternative 1HI compared to the Alternative 0 base case.

- Proposed modifications to Old Northern Avenue improve the operations of New Northern Avenue and the East and West Service Road intersections by keeping opposing left turn queues from blocking New Northern Avenue and Service Road traffic.

- Proposed improvements to Congress Street are expected to enhance the pedestrian environment, improve safety, and reduce congestion along the existing segment of Congress Street.

D Street Connection

- The connection of D Street between Summer Street and the Massport Haul Road is a critical circulation improvement element. It allows South Boston residents and businesses south of Summer Street to access World

Trade Center and Northern Avenue more directly and the urban design advantage of removing the need for "New Ramp Street" on Massport property. The D Street connection, accompanied by proposed new one-way street pattern neighborhood traffic controls on C, D, and E Streets between Cypher and W. Second Streets, results in a decrease in through traffic on South Boston residential streets. Even without proposed new neighborhood traffic controls, future AM and PM peak hour cordon traffic volumes on South Boston residential streets are projected to increase only slightly -- by less than 50 vehicles per hour (less than 1 percent of the total) on A-L Streets excluding the South Boston Bypass Road. This modest increase reflects an assumption that recommended street pattern changes contained in the BTD's South Boston Neighborhood Transportation Study (1988, the BSC Group and Cambridge Systematics) Inc.) are implemented by the year 2010.

I. INTRODUCTION

This Technical Memorandum documents the development and evaluation of local roadway alternatives for the Fort Point Channel/South Boston Roadway Improvements Study. While the findings contained in this report provide a solid basis for identifying the effectiveness of various local roadway options at achieving transportation, land use, and urban design objectives, it is important to recognize that the identification and analysis of a "consensus" local roadway grid pattern will follow only after an extensive review of these findings by other involved public agencies (MDPW, MBTA, Massport), as well as South Boston business and residential community review of the findings contained in this report.

Cambridge Systematics, Inc., working closely with Fay, Spofford & Thorndike, Inc. and coordinating with numerous State and local agencies, has used the TRANPLAN computer model to compare the traffic effectiveness of numerous local roadway and ramp configurations within the Fort Point Channel/South Boston study area. Furthermore, as part of the work products of this study, the Boston Transportation Department will be given, and be able to use, the TRANPLAN computer model to conduct further analyses of local street impacts as conditions change in the Fort Point Channel/South Boston area.

II. EXISTING TRAFFIC CONDITIONS

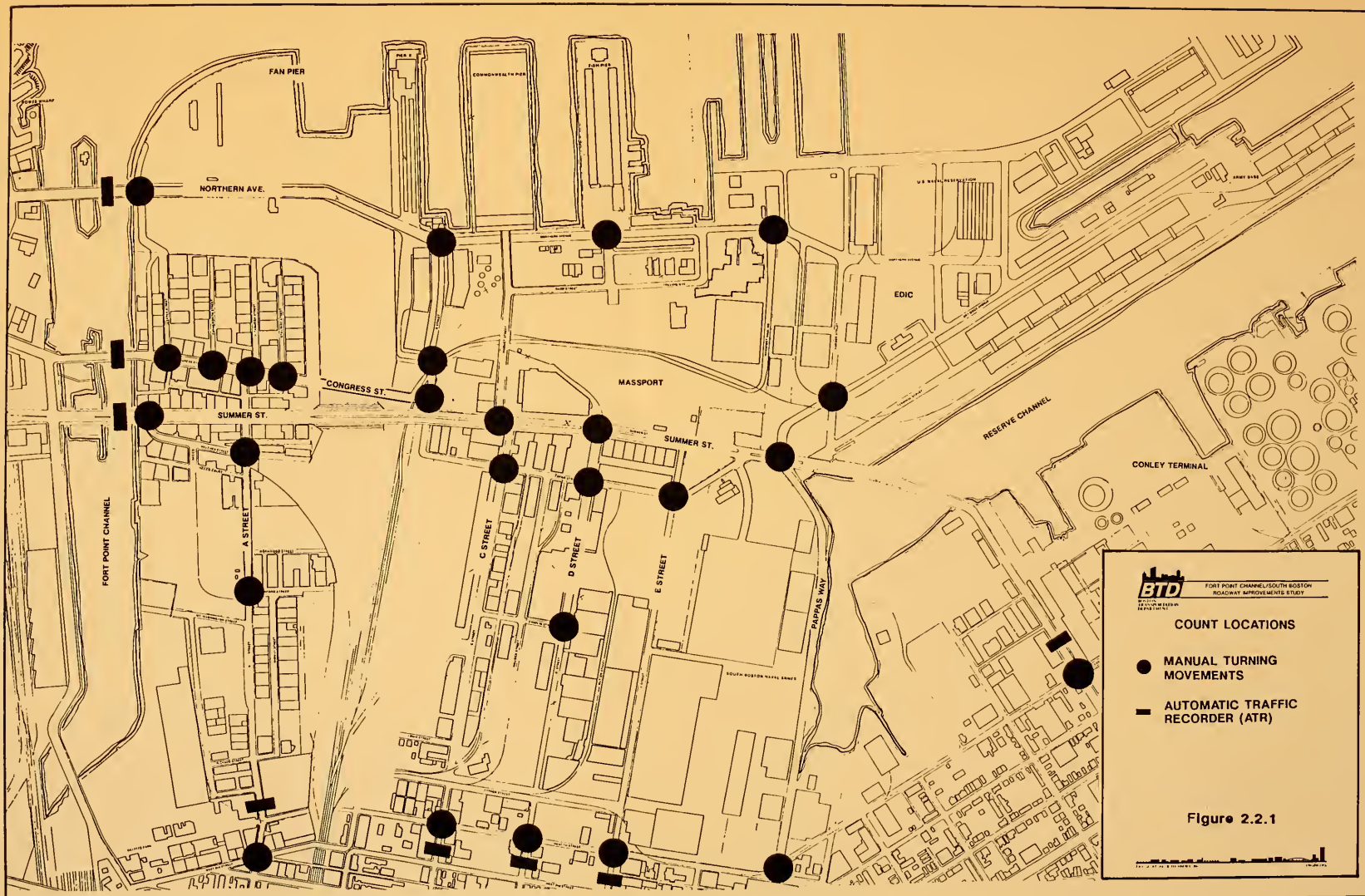
Count Program Summary

During the last two weeks of September, 1988, Facilities Data, Inc., under the general direction of Fay, Spofford & Thorndike, Inc., (FST) undertook a major count program to address the joint issues of traffic generation and truck use of South Boston/Fort Point Channel industrial area streets.

Individual intersection manual count forms, diagrams, and work pieces were prepared and organized in a manner to ensure that the proper data was collected. In addition, eight (8) automatic traffic recorders were placed along the cordon into the industrial area to provide a basis for converting 12-hour manual count data to 24-hour weekday estimates. FST was responsible for the overall program development, Facilities Data, Inc. was responsible for implementing and supervising the actual count program. The manual count program involved a total of 28 intersections in the South Boston/Fort Point Channel area. Figure 2.2.1 illustrates the count program locations within the study area. The program was developed to achieve the following objectives:

- Identify traffic volumes in the study area for a single consistent period.

- Identify actual routings and volumes, both for total traffic and trucks, on roadways not only at the cordon to the study area, but within the study area.


FAN PIER
NORTHERN AVE.
CONGRESS ST.
SUMMER ST.
MASSPORT
SUMMER ST.
EDIC
RESERVE CHANNEL
CONLEY TERMINAL
FORT POINT CHANNEL
A STREET
C STREET
D STREET
E STREET
PAPPAS WAY
BTD
FORT POINT CHANNEL/SOUTH BOSTON ROADWAY IMPROVEMENTS STUDY
COUNT LOCATIONS
MANUAL TURNING MOVEMENTS
AUTOMATIC TRAFFIC RECORDER (ATR)
Figure 2.2.1

- Provide a sound basis for estimating the through vs. local volumes for both trucks and general traffic in the South Boston/Fort Point Channel area.

- Provide a credible basis for calibrating the TRANPLAN model which was used to forecast traffic and evaluate major roadway options within the South Boston/Fort Point Channel area (See Technical Memorandum 2.1 for documentation of the traffic modelling effort for the PWED study area).

The findings from that count program are summarized below. The manual portion of the count program was conducted between the hours of 6 AM and 6 PM on consecutive Tuesdays, Wednesdays, and Thursdays between September 13 and September 22, 1988. Intersections were grouped together in a manner that would minimize inconsistencies and maximize the value of data collected. The traffic count program was purposely organized to separate truck data from total traffic data. For recording purposes, a truck was simply identified as a vehicle with 6 or more tires.

In addition, collected truck data was further categorized to identify trucks with more than 6 tires as well as trucks carrying hazardous cargo. Traffic surveyors were also asked to record the perceived level of pedestrian activity at intersections counted.

The detailed count program results have been transcribed to six (6) sepias available to be borrowed from FST for reproduction upon request. These sepias contain the following information:

Total Average Weekday Traffic Volumes;

Total AM Peak Hour Traffic Volumes;

Total PM Peak Hour Traffic Volumes;

Average Weekday Truck Volumes;

AM Peak Hour Truck Volumes; and

PM Peak Hour Truck Volumes.

General Circulation Findings

It was found that on an average weekday approximately 104,000 vehicles per day (53,300 entering and 50,700 exiting) cross the industrial area cordon of South Boston/Fort Point Channel bounded by West First Street on the south and the Fort Point Channel on the west. Of these vehicles, approximately 11 percent or 11,200 vehicles (5,870 entering and 5,370 exiting) are trucks with 6 or more tires. About one in every five trucks was identified as having more than 6 tires, and about one in every 75 trucks at the cordon was found to be carrying hazardous cargo.

Typically, the AM street peak hour occurred from 7:45-8:45 AM and the PM street peak hour occurred from 4:30 PM to 5:30 PM at intersections in the study area.

On an average weekday, it is estimated that about 25 percent of all vehicles crossing the South Boston/Fort Point Channel industrial area cordon are through vehicles with neither an origin nor a destination in the South Boston/Fort Point Channel industrial area.

Of the through vehicles, however, it is estimated that less than half (5-10 percent of the total traffic) have neither an origin or a destination in the rest of South Boston. Most of the "through" vehicle trips in the Fort Point Channel area would appear to have an origin or destination in the South Boston residential community rather than outside the residential community. Put another way, the vast majority of existing drivers on South Boston roadways in the Fort Point Channel area are there because they need to be there, not because they are bypassing congestion on other roadways.

By inference, it is estimated that in September, 1988, the South Boston/Fort Point Channel industrial area generated more than 77,200 vehicle trips on a typical weekday -- about 37 percent more trips than estimated by FST previously in October, 1988. At that time a preliminary assessment of overall trip generation was made by applying trip generation rates for land use categories contained in the ITE Trip Generation Report (Institute of Transportation Engineers, 1987 Edition). It is important to note that the cordon trips do not include short trips internal to the study area, which according to the traffic surveyors, accounted for some of the tripmaking in the piers area. This means that the area probably generates some 80,000 ± vehicle trips each day (if one assumes a 1.15 persons per vehicle occupancy, this translates into about 89,000 person trips each day excluding public transportation related trip making to and from the area).

Daily vehicle trip generation in the Fort Point Channel area could be higher than the ITE Trip Generation report land use compilations would suggest due to several factors including:

- South Boston/Fort Point Channel maritime/fishing industries are generating more vehicle trips than the ITE land use category for general light industrial uses would indicate;

- The World Trade Center and Museum Wharf traffic generators are generating more vehicle trips per day during off-peak hours than the ITE cultural land use rates suggest;

- The parking uses adjacent to downtown Boston could be generating more trips during off-peak hours than originally estimated; and

- The daily modal share to transit and walk trips (25 percent north of Summer Street) may have been over-estimated in the original trip generation estimate.

An analysis of the peak hour traffic in and out of the South Boston/Fort Point Channel industrial area resulted in an opposite finding -- the ITE rates produced results that were about 25 percent higher than what was found in the field during both the morning and afternoon peak hours. In addition, the directionality of the ITE rates differed from what was found in the field during the AM and PM peak hours.

The ITE peak hour vehicle traffic generation rates would anticipate a

split of 85 % entering and 15 % exiting during the morning peak hour; 83 % exiting and 17 % entering during the afternoon peak hour for land uses within the South Boston/Fort Point Channel industrial area. Estimates from the actual counts indicate that 29 % of the traffic generated in the South Boston/Fort Point Channel area was exiting and 71 % entering during the morning peak hour. During the afternoon peak hour, 31 % of the traffic generated in the South Boston/Fort Point Channel area was entering and 69 % exiting the area.

The difference in traffic directionality between field counts and ITE rates may be attributed to the fact that industrial uses in South Boston do not produce traffic as directional as the General Light Industrial category of ITE Trip Generation report. Also, traffic from several properties of a single land use type within a large area would tend to spread traffic over time compared to traffic from a single user which is usually addressed by the ITE studies.

To summarize, the existing Fort Point Channel/South Boston land uses tend to generate less traffic during the AM and PM peak hours, but more throughout the day than ITE Trip Generation report studies for individual land uses would suggest.

The directionality of peak hour traffic at the South Boston/Fort Point Channel area cordon (which includes through traffic) is similar to the directionality of traffic generated within the area, but not as highly directional. During the morning peak hour, 66 percent of the cordon vehicular

traffic is inbound while 34 percent is outbound. The traffic pattern reverses itself during the afternoon peak hour; 64 percent of the cordon vehicular traffic is outbound and 36 percent inbound.

The estimation of through traffic in the Fort Point Channel/South Boston study area was accomplished by manually tracing the turning movements at key intersections through the South Boston study area at entering points all the way through to possible exiting points. It is assumed that the through traffic will distribute itself through corridors in proportion to the through movements that were measured at each of the intersections counted along the routes that through traffic is expected to follow.

The amount of through traffic entering the South Boston/Fort Point Channel industrial area cordon is similar during both peak hours (± 1,000 vehicles per hour). Through traffic represents about 19 per cent of entering traffic during the morning and 35 percent of exiting traffic; this flip-flops during the afternoon peak hour when through traffic represents 35 percent of the entering traffic and 19 percent of the exiting traffic. Again, it is estimated that only a fraction of the peak hour through traffic actually travels through the entire South Boston residential community because the residential community, itself, is generating through traffic into the Fort Point Channel industrial area.

Table 2.2.1 summarizes AM peak hour, PM peak hour, and average weekday through traffic estimates of September, 1988 traffic entering into a cordon along the Fort Point Channel/South Boston study area. Figures 2.2.2 through 2.2.7 illustrate the proportion of average weekday traffic volumes entering into Summer Street, Northern Avenue, Congress, A, D, and L Streets, that is estimated to be exiting the study area without stopping within it.

Truck Circulation Findings

The September, 1988 traffic survey results indicated that truck trips into the study area were less likely to be through trips than automobile trips.

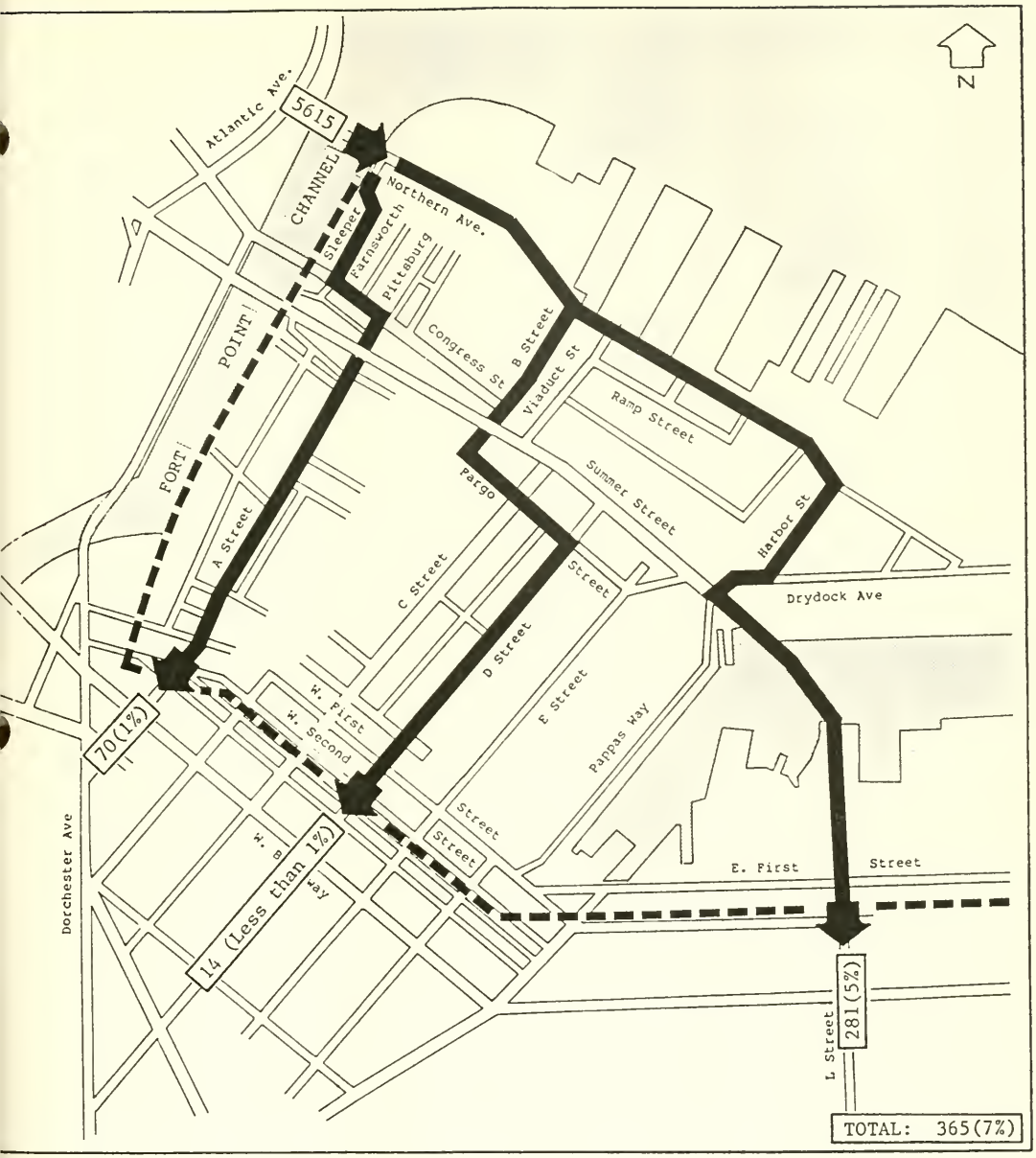
Table 2.2.1

SOUTH BOSTON/FORT POINT CHANNEL STUDY AREA

THROUGH TRAFFIC ESTIMATES BY STREET - SEPTEMBER 1988

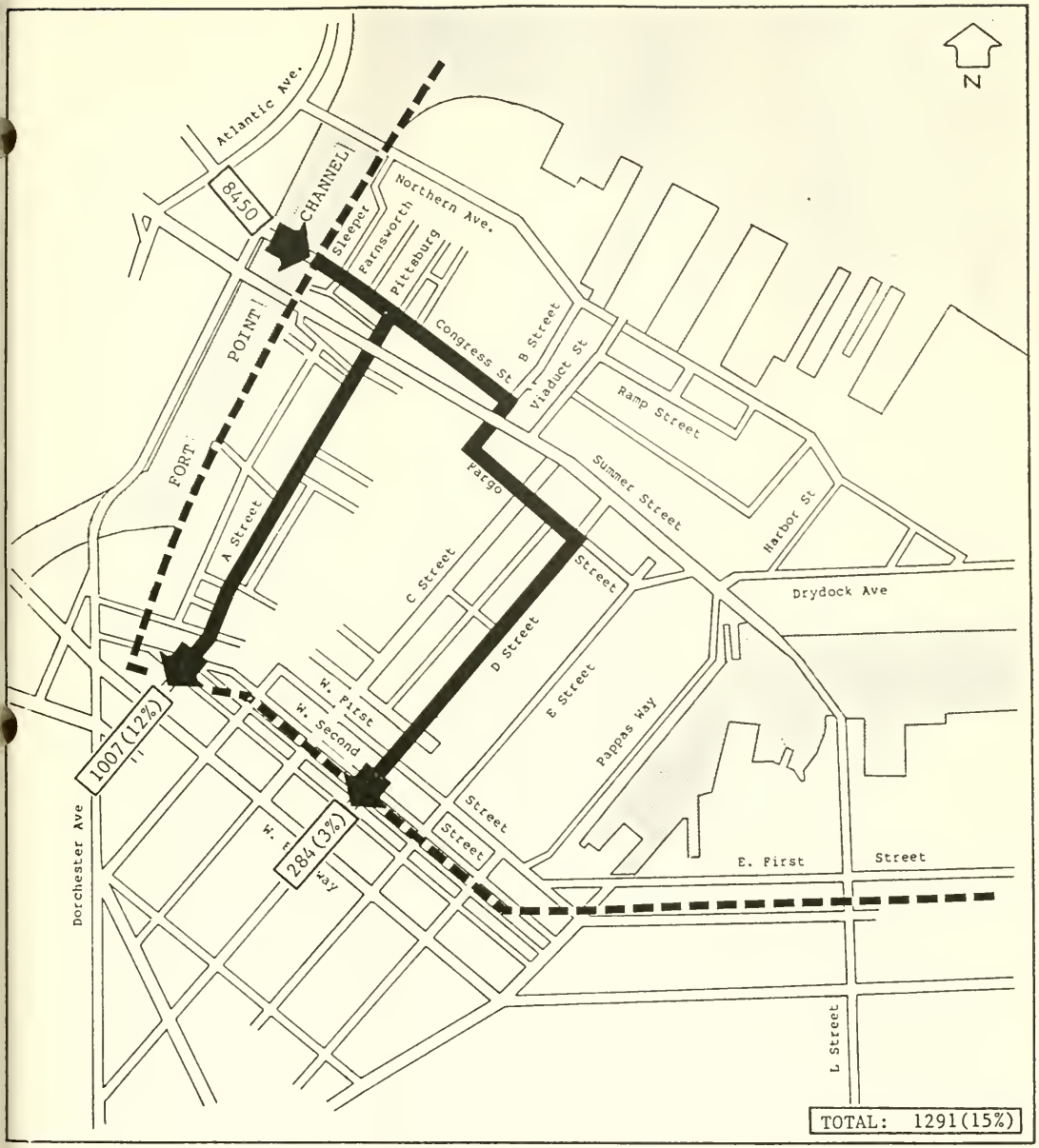
(EXPRESSED AS A PERCENTAGE OF TOTAL ENTERING TRIPS)

VEHICLES ENTERING AT	AM	PM	AWDT
Northern Avenue Bridge	2%	24%	7%
Congress Street Bridge	9%	23%	15%
Summer Street Bridge	24%	44%	34%
A Street	31%	64%	42%
D Street	31%	27%	26%
L Street	40%	42%	37%
Combined Average v. Total Entering Vehicle Trips	19%	35%	25%
Cordon Total Vehicles Entering	5390	2930	53,300
Cordon Total Vehicles Exiting	2820	5330	50,700
Estimated Through Trips Entering Cordon	1000	1025	13,400



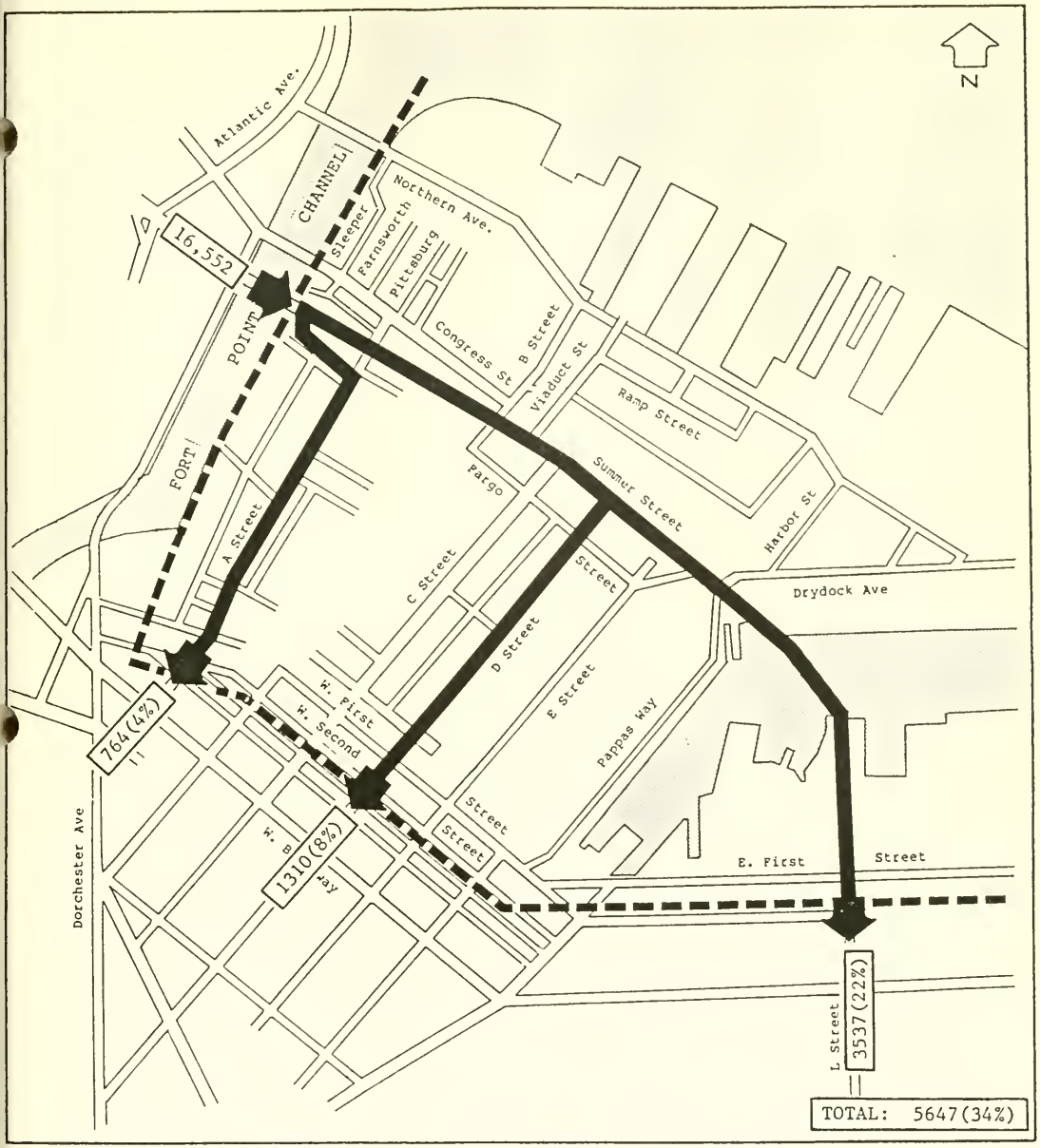
ESTIMATED SEPTEMBER, 1988 AWDT THROUGH TRIPS
ENTERING AT NORTHERN AVENUE

Figure 2.2.2



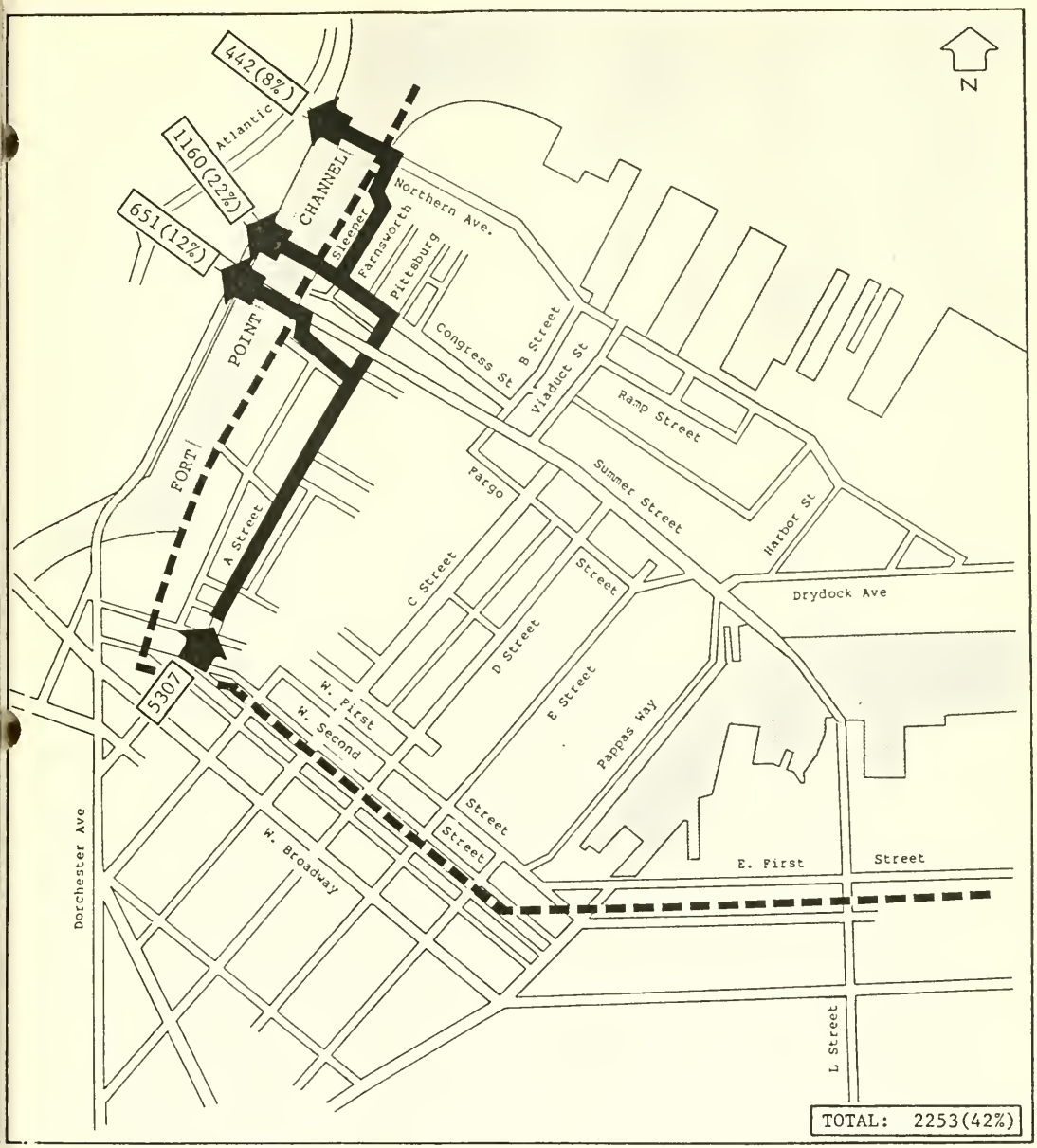
ESTIMATED SEPTEMBER, 1988 AWDT THROUGH TRIPS ENTERING AT CONGRESS STREET

Figure 2.2.3



ESTIMATED SEPTEMBER, 1988 AWDT THROUGH TRIPS ENTERING AT SUMMER STREET

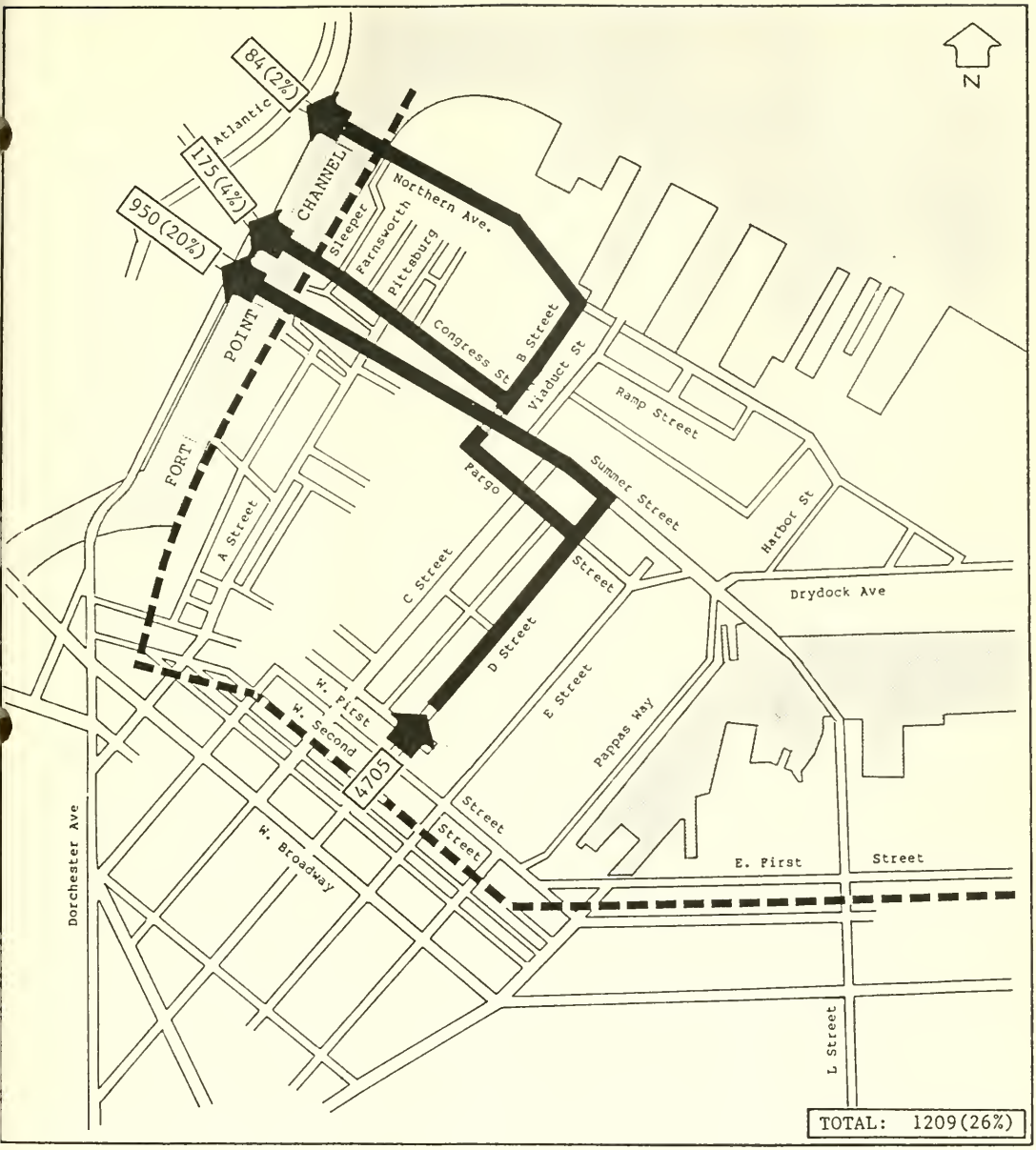
Figure 2.2.4



ESTIMATED SEPTEMBER, 1988 AWDT THROUGH TRIPS

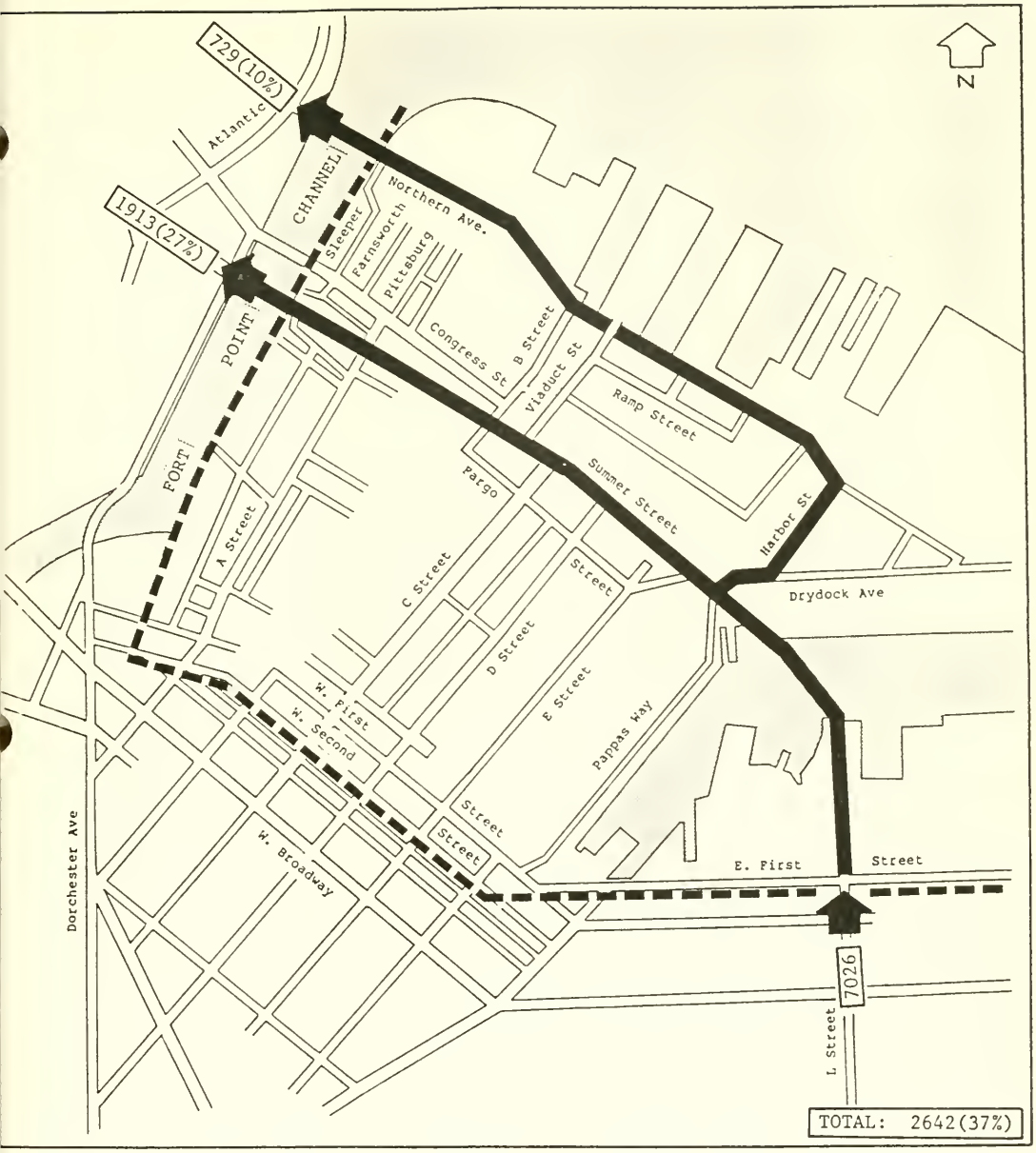
ENTERING AT A STREET

Figure 2.2.5



ESTIMATED SEPTEMBER, 1988 AWDT THROUGH TRIPS ENTERING AT D STREET

Figure 2.2.6



ESTIMATED SEPTEMBER, 1988 AWDT THROUGH TRIPS ENTERING AT L STREET

Figure 2.2.7

About 13 percent of the average weekday truck traffic in the South Boston/Fort Point Channel study area was estimated to be through traffic. Again, it is probable that the majority of the "through" truck traffic actually has an origin or destination in the residential/downtown area of South Boston.

The traffic survey found that on a daily basis, about 35 percent of the truck trips at the cordon (approximately 3,900 trucks) were entering or exiting to and from streets which connect to the South Boston residential neighborhood. This finding tends to re-emphasize the importance of constructing the South Boston Bypass Road as quickly as possible not only to intercept trucks during construction of the Third Harbor Tunnel/Seaport Access Road, but to intercept southerly oriented trucks to and from the South Boston/Fort Point Channel industrial area. Table 2.2.2 lists the estimated percentages of through truck traffic expressed as a percentage of total truck traffic by street in the Fort Point Channel/South Boston area.

As mentioned before, on a daily basis, trucks accounted for about 11 percent of vehicles entering or exiting the South Boston/Fort Point Channel industrial area. Truck trips, however, do not represent a similar percentage of traffic volumes in the area during the AM and PM peak hours. During the morning peak hour, trucks accounted for about 9 percent of all vehicles entering or exiting, and about 4 percent of all vehicles entering or exiting the Fort Point Channel/South Boston study area during the afternoon peak hour. Table 2.2.3 summarizes truck volumes at individual intersections in the study area by size and hazardous cargo.

Table 2.2.2

SOUTH BOSTON/FORT POINT CHANNEL STUDY AREA

THROUGH TRUCK TRIP ESTIMATES BY STREET - SEPTEMBER 1988

(EXPRESSED AS A PERCENTAGE OF TOTAL TRUCKS ENTERING)

VEHICLES ENTERING AT	AM	PM	AWDT
Northern Avenue Bridge	2%	0%	1%
Congress Street Bridge	5%	25%	10%
Summer Street Bridge	10%	7%	21%
A Street	24%	16%	21%
D Street	18%	7%	15%
L Street	44%	30%	32%
Combined Average v. Total Entering Truck Trips	12%	10%	13%
Cordon Total Entering Trucks	425	200	5870
Cordon Total Exiting Trucks	335	155	5370
Estimated Through Truck Trips Entering Cordon	50	20	760

Table 2.2.3

COMPARISON OF SOUTH BOSTON/FORT POINT CHANNEL

TRUCK VOLUMES BY INTERSECTION

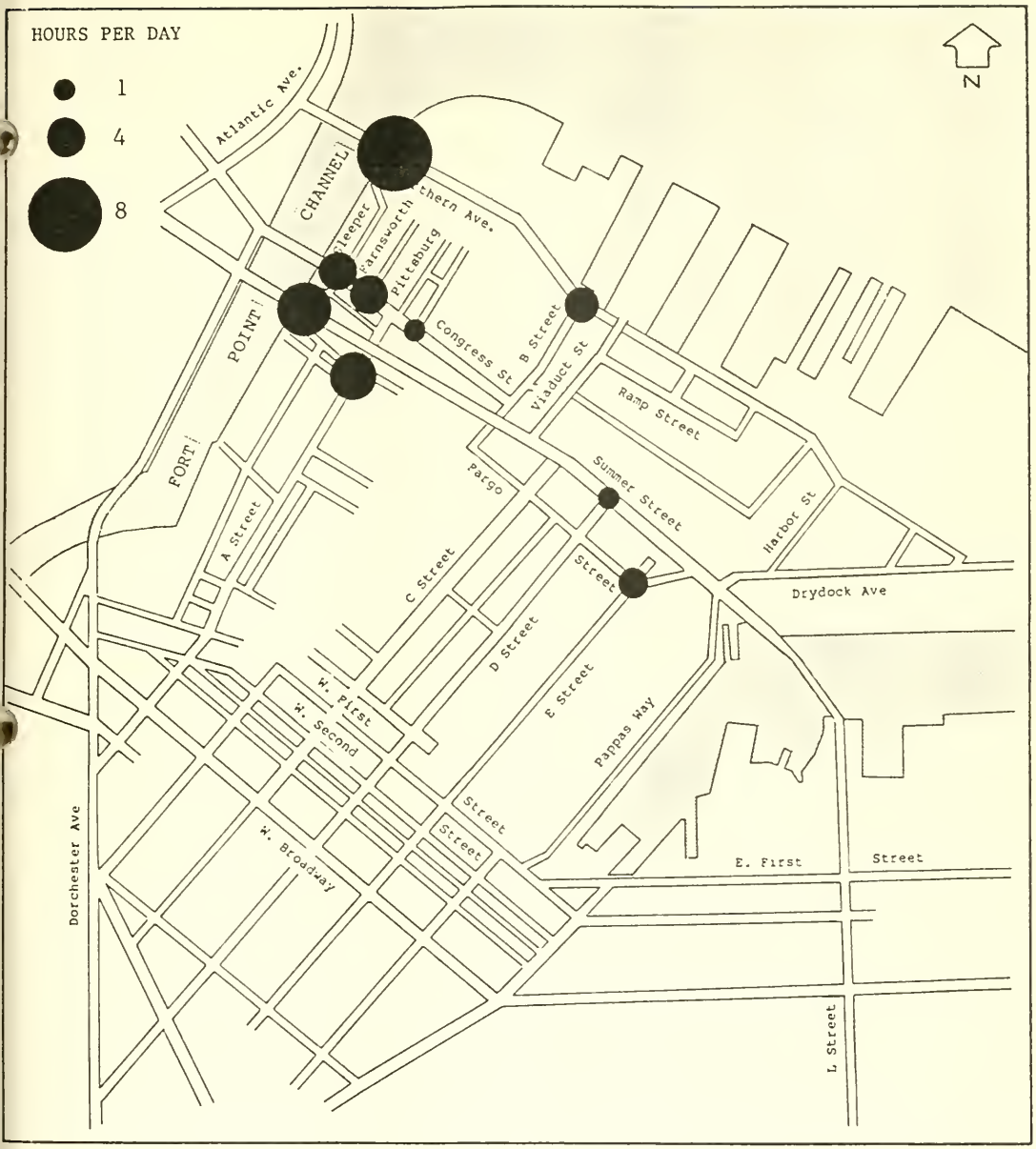
INTERSECTION	% TOTAL TRUCKS OF ALL VEHICLES	% LARGE TRUCKS OF ALL VEHICLES	% LARGE Vs. TOTAL TRUCKS	% HAZARDOUS Vs. TOTAL TRUCKS
Northern @ Sleeper	8	2	20	less than 1
Northern @ B	12	3	21	0
Northern @ Ramp	16	2	15	less than 1
Northern @ Haul Road	10	2	17	less than 1
Congress @ Sleeper	10	2	17	1.5
Congress @ Farnsworth	12	4	28	1.5
Congress @ A	13	4	30	1.5
Congress @ Stillings	17	3	17	2
Congress @ B	22	7	31	2
B @ Massport Haul Road	31	8	26	less than 1
Summer @ Viaduct	7	2	22	less than 1
Summer @ D	12	3	29	2.5
Summer @ Fargo	9	2	28	5.5
Summer @ Pappas	7	2	30	3
Summer @ Melcher	17	1	6	1
Melcher @ A	11	2	20	1.5
Fargo @ C	35	7	20	2
Fargo @ D	13	4	29	1.5
Fargo @ E	8	3	28	less than 1
A @ Mt. Washington	10	3	28	less than 1
D @ Claflin	13	1	10	less than 1
A @ W. Second	18	2	13	less than 1
C @ W. First	34	9	28	2
D @ W. First	16	3	21	2
E @ W. First	23	5	23	2
Pappas @ W. First	16	2	13	3
L @ W. First	11	2	19	6
Drydock @ Harbor	5	1	5	0
AREA TOTALS	13	3	21	2 [0.25% of total vehicles]

Pedestrian Circulation Findings

Not surprisingly, most of the pedestrian activity was confined to the Museum Wharf area and the World Trade Center area. Of the 28 intersections counted, significant pedestrian activity, i.e., more than 200 pedestrians per hour, was noted for one hour or more of the 12 hour count period only at the following locations (in relative order of activity from most to least):

- Northern Avenue at Sleeper Street (8 hours)
- Summer Street at Melcher Street (6 hours)
- Melcher Street at A Street (5 hours)
- Congress Street at Sleeper Street (4 hours)
- Congress Street at Farnsworth Street (4 hours)
- Northern Avenue at B Street (3 hours)
- Fargo Street at E Street (2 hours)
- Congress Street at Stillings Street (1 hour)
- Summer Street at D Street (1 hour)

Figure 2.2.8 highlights the existing locations of high pedestrian activity from the September, 1988 count program.



LOCATIONS WITH HIGH PEDESTRIAN ACTIVITY

Figure 2.2.8

Roadway and Sidewalk Conditions and Types

Pavement and sidewalk conditions affecting the riding and walking surface are key determinants of the quality of vehicle/pedestrian circulation. Poor pavement and sidewalk surfaces not only increase vehicular noise, but also adversely affect vehicular and pedestrian safety and the maintenance requirements of vehicles using those streets.

Figures 2.2.9 and 2.2.10 summarize observed roadway and sidewalk conditions in the Fort Point Channel/South Boston study area. Figure 2.2.10 shows where sidewalks exist in the study area as well as their condition.

Except for the length of A Street (recently reconstructed by the City of Boston), Northern Avenue east of B Street, Viaduct Street, Ramp Street, Trilling Way, Racin Street, and streets serving the Boston Marine Industrial Park, both roadways and sidewalks are generally in fair to poor condition.

Pavement conditions of the publicly-owned Congress Street east of Sleeper Street, Sleeper Street, B Street, Summer Street east of Melcher, as well as C, D, E, and West First Streets are all listed in poor condition. Privately owned Farnsworth Street, Pittsburgh Street, and Stillings Street are also listed in poor condition. All of these roadways are candidates for improvement as the Fort Point Channel/South Boston industrial area develops.

As a comparison, Figures 2.2.11 and 2.2.12 summarize the types of materials used in existing roadways and sidewalks in the Fort Point Channel area.

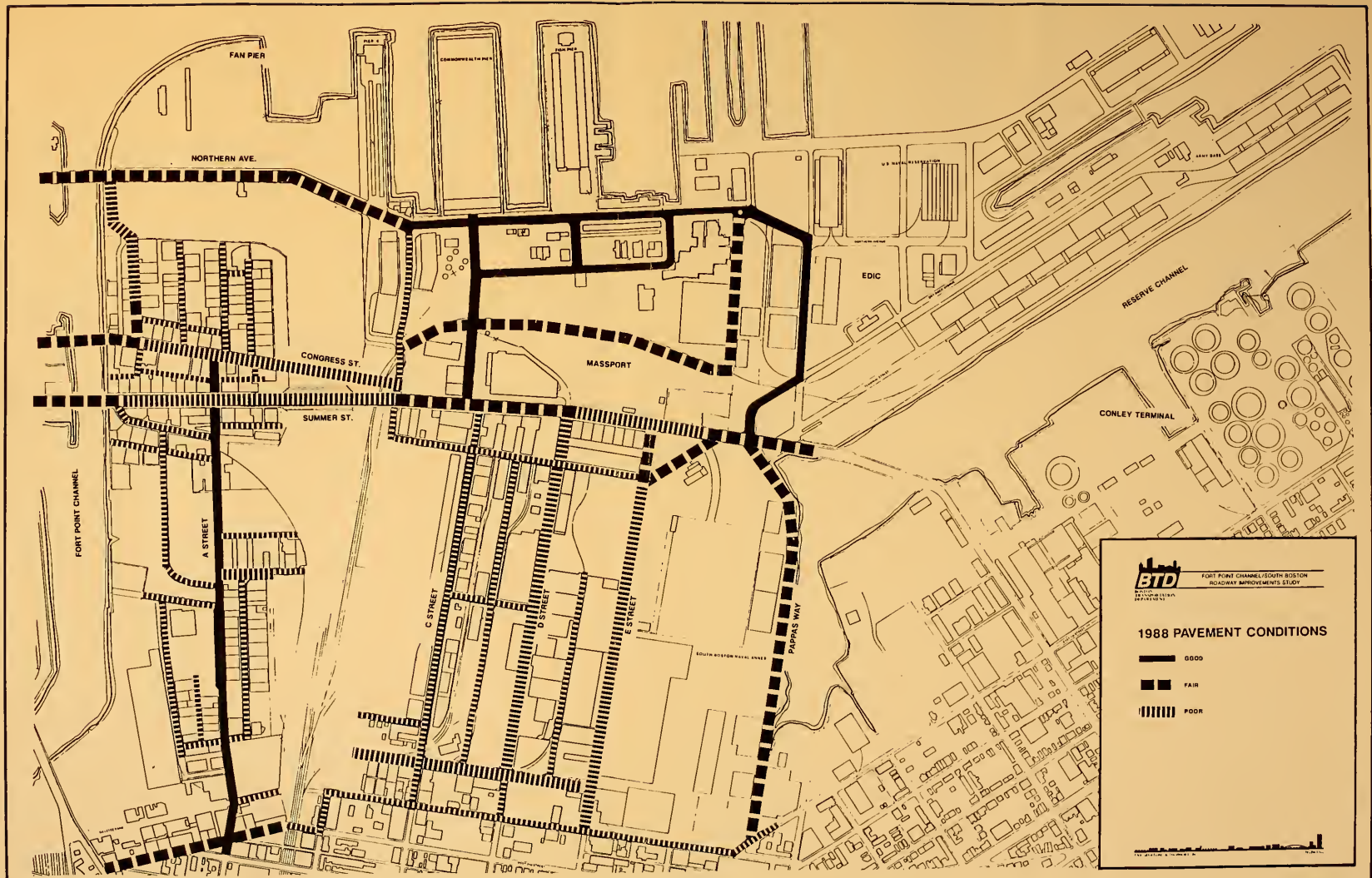

FAN PIER
NORTHERN AVE.
CONGRESS ST.
SUMMER ST.
MASSPORT
EDIC
RESERVE CHANNEL
CONLEY TERMINAL
FORT POINT CHANNEL
A STREET
C STREET
D STREET
E STREET
PAPPAS WAY
BTD
FORT POINT CHANNEL/SOUTH BOSTON ROADWAY IMPROVEMENTS STUDY
1988 PAVEMENT CONDITIONS
GOOD
FAIR
POOR

Figure 2.2.9


FAN PIER
NORTHERN AVE.
CONGRESS ST.
SUMMER ST.
MASSPORT
EOIC
RESERVE CHANNEL
CONLEY TERMINAL
FORT POINT CHANNEL
A STREET
C STREET
D STREET
E STREET
PAPPAS WAY
BTD
FORT POINT CHANNEL/SOUTH BOSTON ROADWAY IMPROVEMENTS STUDY
1988 SIDEWALK CONDITIONS
GOOD
FAIR
POOR

Figure 2.2.10


FAN PIER
NORTHERN AVE.
CONGRESS ST.
SUMMER ST.
FORT POINT CHANNEL
A STREET
C STREET
D STREET
E STREET
PAPPAS WAY
MASSPORT
EDIC
RESERVE CHANNEL
CONLEY TERMINAL
BTD
FORT POINT CHANNEL/SOUTH BOSTON ROADWAY IMPROVEMENTS STUDY
1988 PAVEMENT TYPES
BITUMINOUS
COBBLE STONE
CONCRETE
STEEL BRIDGE DECK
UNPAVED

Figure 2.2.11

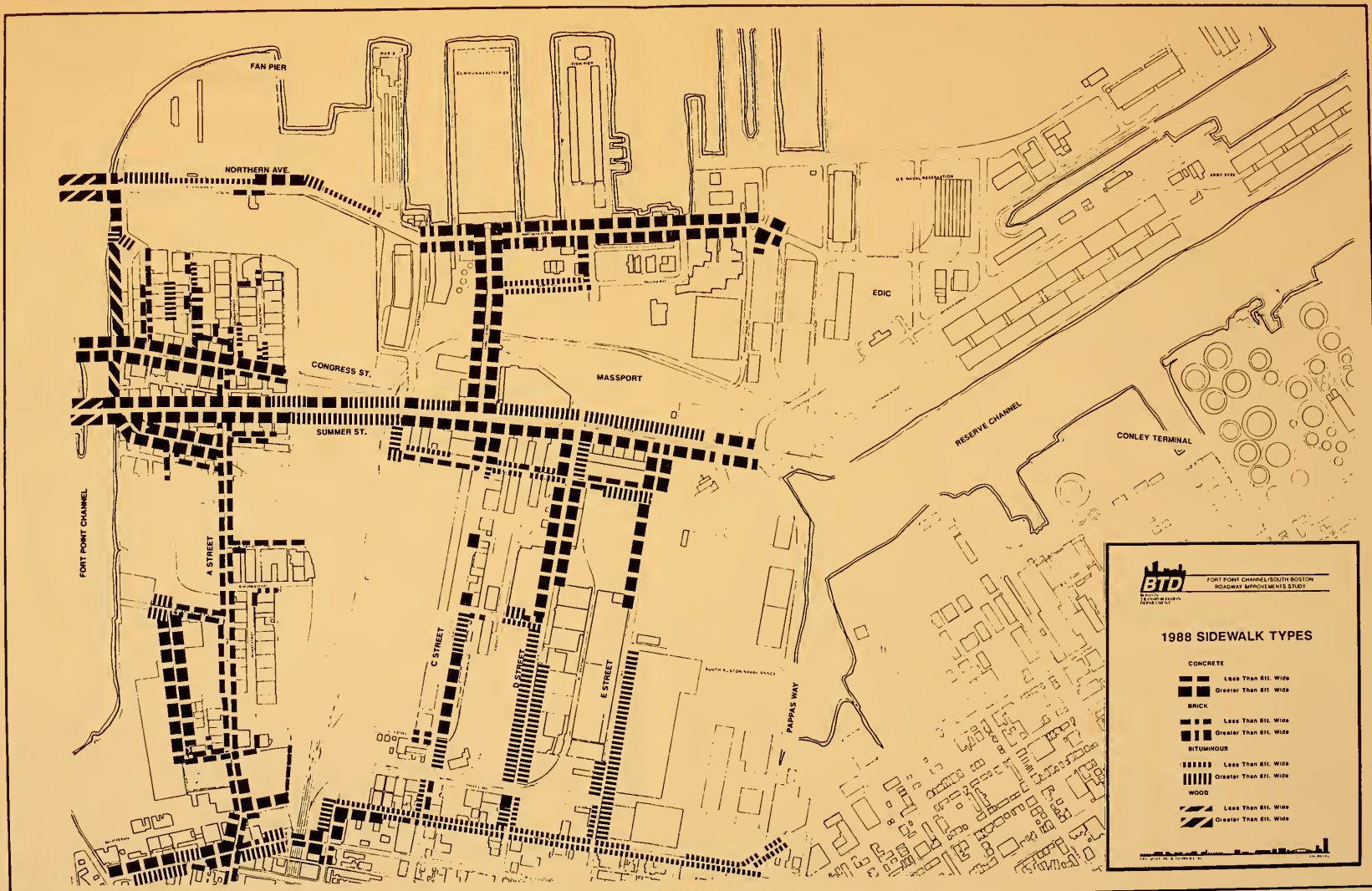

FAN PIER
NORTHERN AVE
CONGRESS ST.
SUMMER ST.
FORT POINT CHANNEL
A STREET
C STREET
D STREET
E STREET
PAPPAS WAY
MASSPORT
EDIC
RESERVE CHANNEL
CONLEY TERMINAL
BTD
FORT POINT CHANNEL/SOUTH BOSTON
ROADWAY IMPROVEMENTS STUDY
1988 SIDEWALK TYPES
CONCRETE
Less Than 6ft. Wide
Greater Than 6ft. Wide
BRICK
Less Than 6ft. Wide
Greater Than 6ft. Wide
BITUMINOUS
Less Than 6ft. Wide
Greater Than 6ft. Wide
WOOD
Less Than 6ft. Wide
Greater Than 6ft. Wide

Figure 2.2.12

As shown in Figure 2.2.11, while bituminous pavement is most common in the area, about a third of the roadway surfaces in the area are paved with belgian block cobblestone. Figure 2.2.12 indicates the wide variety of materials used in study area sidewalks. In addition to sidewalk types, Figure 2.2.12 indicates the relative width of sidewalks in the area; it indicates that many sidewalks are less than 6 feet wide -- clearly not designed to carry heavy pedestrian volumes. Rather than concrete and brick, most sidewalks in the area are made of bituminous concrete. Such material does not have the wearing life expectancy associated with concrete or brick, but may be more economical in an industrial area..

On-Street Parking and Loading

Figures 2.2.13 and 2.2.14 summarize existing on-street parking and loading, respectively.

On-street parking has a substantial impact on traffic operations by reducing a roadway's capacity. Parallel parking, however, has much less of an impact in a roadway's capacity than perpendicular or on-street angle parking. As indicated on Figure 2.2.13, most of the roadways in the study area have on street parking. Unlike many urban areas, however, a substantial amount of the available on-street parking is perpendicular parking to the street, rather than parallel parking.

On-street loading, like on-street parking, has a substantial impact on traffic operations. In particular, loading docks perpendicular to roadways


FAN PIER
NORTHERN AVE.
CONGRESS ST.
SUMMER ST.
FORT POINT CHANNEL
A STREET
C STREET
D STREET
E STREET
MASSPORT
EDIC
RESERVE CHANNEL
CONLEY TERMINAL
PAPPAS WAY
SOUTH BOSTON NAVAL ANNEX
BTD
FORT POINT CHANNEL/SOUTH BOSTON ROADWAY IMPROVEMENTS STUDY
1988 ON-STREET PARKING TYPES
PERPENDICULAR PARKING
PARALLEL PARKING

Figure 2.2.13

produce a substantial reduction in capacity during those times when on-street loading is occurring. As indicated on Figure 2.2.14, on-street loading is prevalent throughout the study area, but particularly affects capacity and traffic operations on A Street, C Street, D Street, and B Street near Northern Avenue.

Federal Aid Urban Systems Network

To qualify for Federal financial assistance, streets must be publicly owned and be placed on the Federal Aid Urban Systems network. Figure 2.2.15 illustrates those streets in the Fort Point Channel/South Boston study area that currently qualify for Federal Aid Urban Systems funding. They include Northern Avenue as far east as Trilling Way, Congress Street as far east as Stillings Street, Sleeper Street, Summer Street/L Street, A Street, Viaduct Street, D Street, E Street, West First Street, and West Second Street.

It is important to note that streets not qualifying for Urban Systems funding may be eligible for other public funding sources (e.g., State and City funding sources such as those relating to the construction of the Seaport Access Road/Third Harbor Tunnel) or may be considered for placement on the Urban Systems network. Otherwise, private sector funding sources through linkage or other impact fee mechanisms must be used to improve the local street system in South Boston.

Modelled 1987 Traffic Volumes and Operations

To serve as a starting basis for year 2010 traffic projections, it was


FAN PIER
NORTHERN AVE.
CONGRESS ST.
SUMMER ST.
FORT POINT CHANNEL
A STREET
C STREET
D STREET
E STREET
PAPPAS WAY
MASSPORT
EDIC
RESERVE CHANNEL
CONLEY TERMINAL
SOUTH BOSTON NAVAL ANNEX
BTD
FORT POINT CHANNEL/SOUTH BOSTON
ROADWAY IMPROVEMENTS STUDY
1988 LOADING DOCK
LOCATIONS
SINGLE LOADING DOCK
8
MULTIPLE LOADING DOCKS

Figure 2.2.14

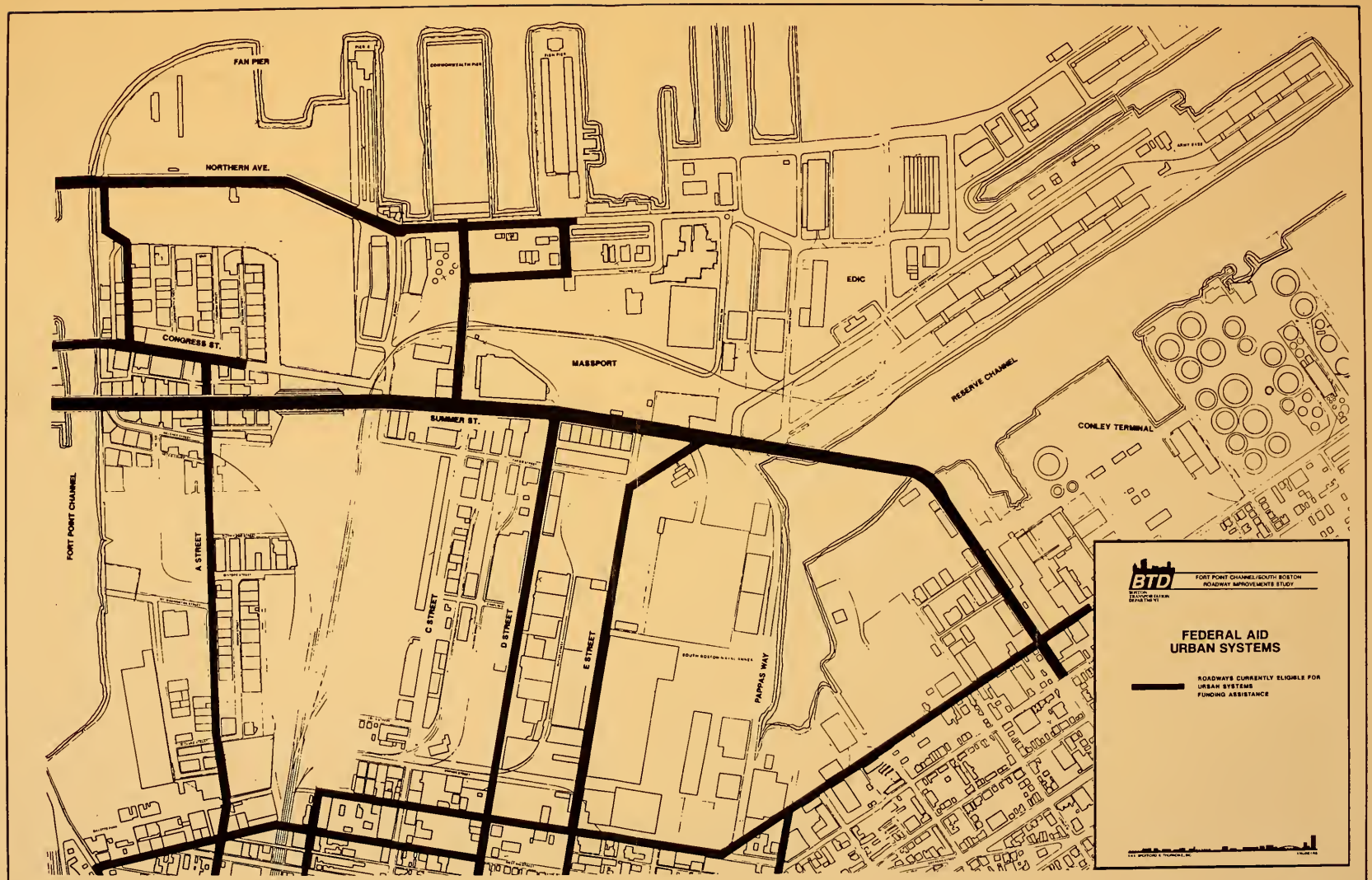
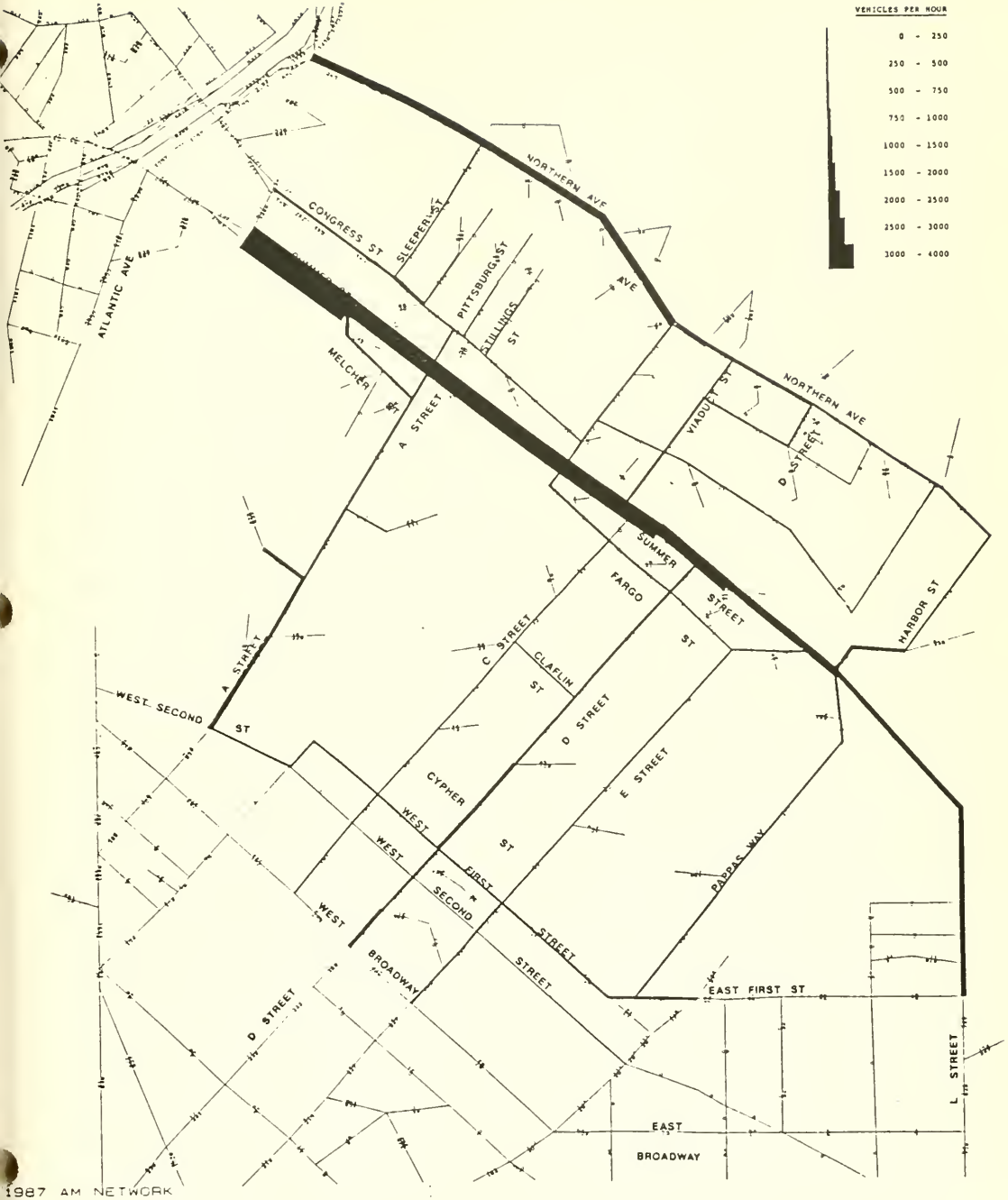

FAN PIER
NORTHERN AVE.
CONGRESS ST.
EDIC
MASSPORT
RESERVE CHANNEL
SUMMER ST.
CONLEY TERMINAL
FORT POINT CHANNEL
A STREET
C STREET
D STREET
E STREET
PAPPAS WAY
BTD
FORT POINT CHANNEL/SOUTH BOSTON
ROADWAY IMPROVEMENTS STUDY
FEDERAL AID
URBAN SYSTEMS
ROADWAYS CURRENTLY ELIGIBLE FOR
URBAN SYSTEMS
FUNDING ASSISTANCE

Figure 2.2.15

first necessary to calibrate the Central Artery/Third Harbor Tunnel computer model for 1987 base year traffic conditions in accordance with the FST count program data. Figures 2.2.16 and 2.2.17 illustrate computerized AM and PM peak hour traffic volume flow networks for the South Boston study area. Figures 2.2.18 and 2.2.19 illustrate the 1987 congested roadway links (level of service E and F) in the Fort Point Channel/South Boston study area.

For modelling purposes, level of service E links are considered to be carrying 80-100 percent of their estimated constrained capacities. Level of service F links are considered to be those carrying more than 100 percent of their estimated constrained capacities.

A, Melcher, D, and Congress Streets (to a lesser degree) also experience some congestion today due primarily to on-street truck loading activities. Even though Northern Avenue does not show up as a congested link, the Sleeper Street intersection with Northern Avenue and the parking lot access is congested during the PM peak hour today.

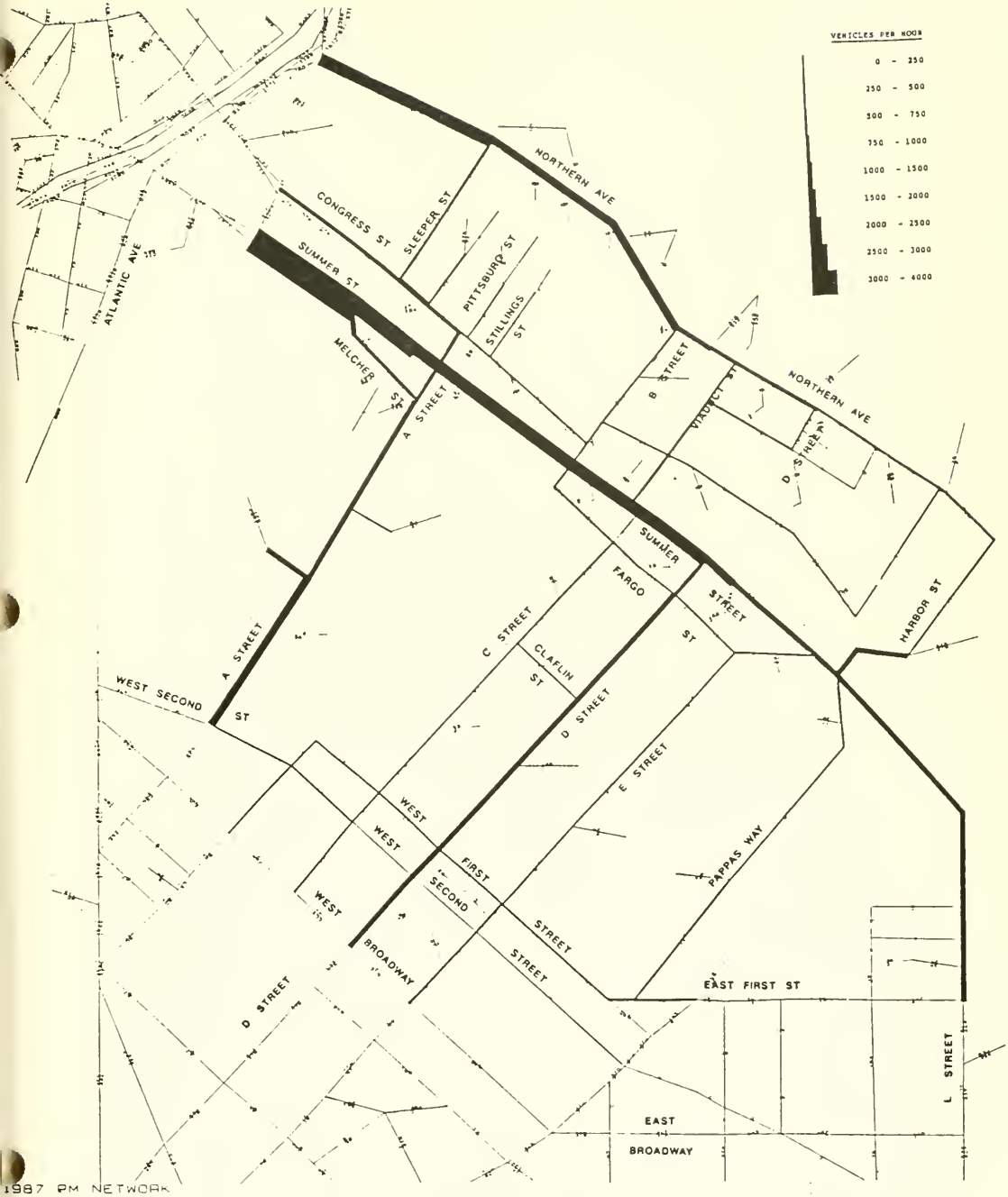


1987 AM NETWORK
VOLUMES REPORTED
FEBRUARY 8, 1989 --- SCO

08FEB89 11 36 31

1987 EXISTING CONDITIONS

Figure 2.2.16

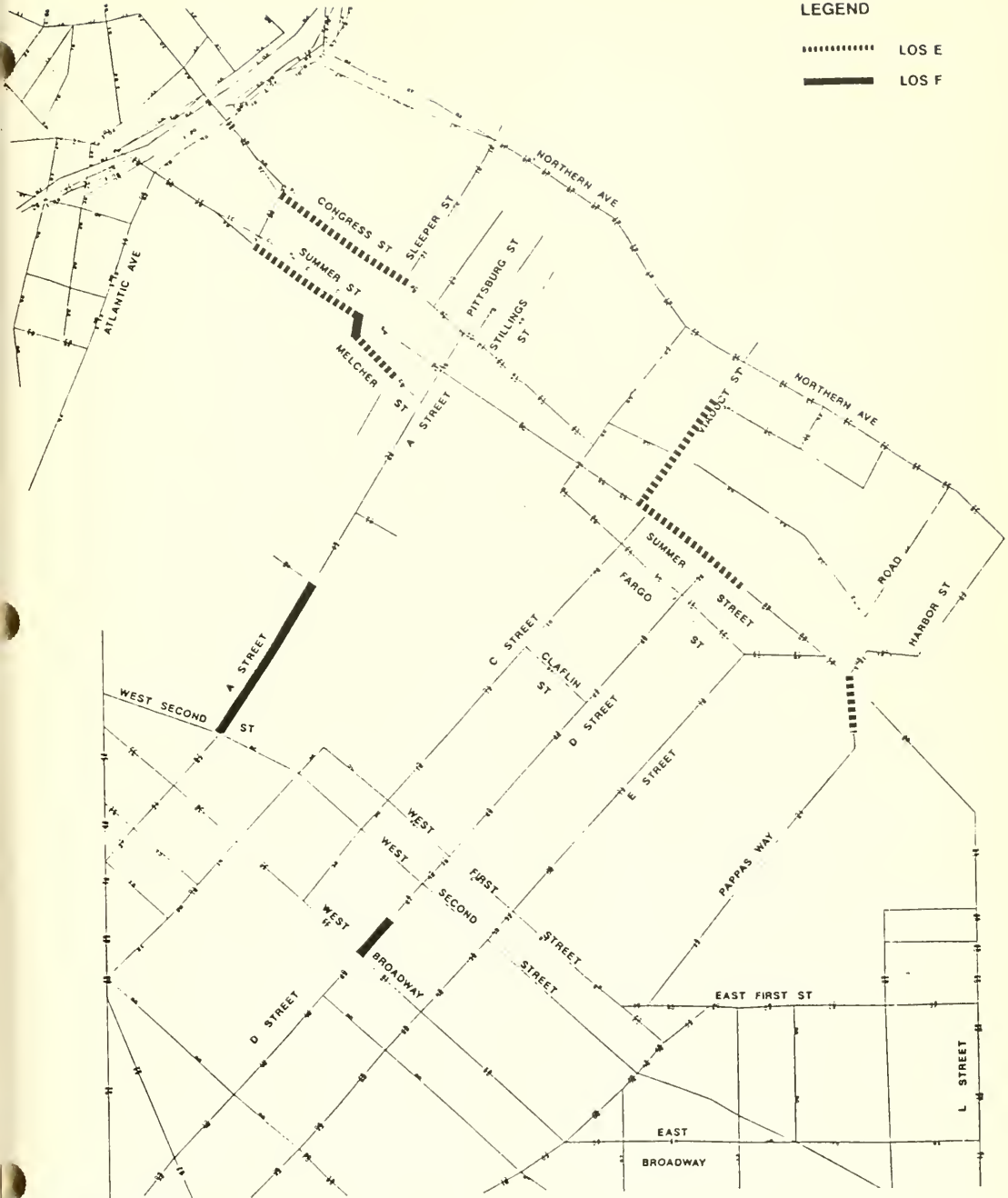


1987 PM NETWORK
VOLUMES REPORTED
FEBRUARY 10, 1989 --- SDD

13FE589 10 52 56

1987 EXISTING CONDITIONS

Figure 2.2.17

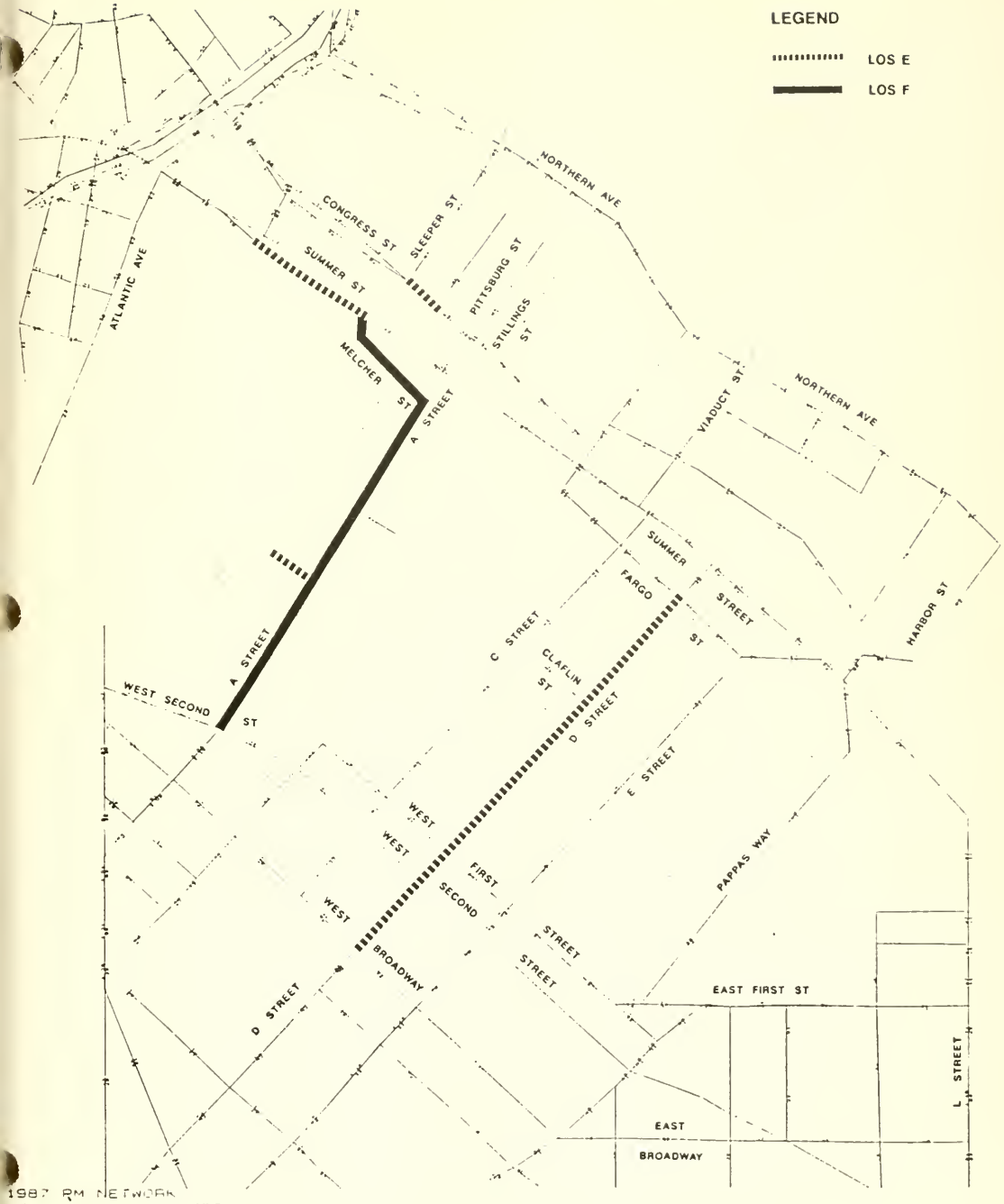


1987 AM NETWORK
V/C RATIOS REPORTED
FEBRUARY 8, 1989 --- SCO

08FEB89 11.40.22

1987 EXISTING CONDITIONS

Figure 2.2.18



1987 RM NETWORK
V/C RATIOS REPORTED
FEBRUARY 10, 1989 --- 500

13FEB89 10 54 39

1987 EXISTING CONDITIONS

Figure 2.2.19

III. FUTURE TRAFFIC CONDITIONS

This section of the report discusses future traffic conditions projected within the Fort Point Channel/South Boston study area. Cambridge Systematics, Inc. (See Technical Memorandum 2.1 - Methodology for Fort Point Channel Area Year 2010 Traffic Projections) used the TRANPLAN personal computer-based traffic planning system to project traffic conditions under a variety of options which affect the local street system in the Fort Point Channel/South Boston study area.

Basic Assumptions Involved in Traffic Forecasting and Option Comparisons

While it is obvious that projected land uses in the Fort Point Channel area will change over time, particularly as the BRA proceeds with its Fort Point Channel District studies, it was necessary early on to settle on a consistent land use future for the Fort Point Channel area in order to move forward with the traffic forecasting procedure for this study. Future land use assumptions for the study area also were purposely made consistent with those used by the Massachusetts Department of Public Works (MDPW) Central Artery/Third Harbor Tunnel consultant. As of October, 1988, officials at the MDPW, MassPort, and the BRA tentatively agreed to a single land use scenario to be used for the MDPW/PWED traffic forecasts. To provide a fair comparison of all local street alternatives, future land uses were assumed to be constant for all local street alternatives evaluated in this study.

Even though the projected magnitude of specific land uses has changed since October, 1988, and will continue to change in the future, comparisons of

Fort Point Channel Area- Revised Zone Network

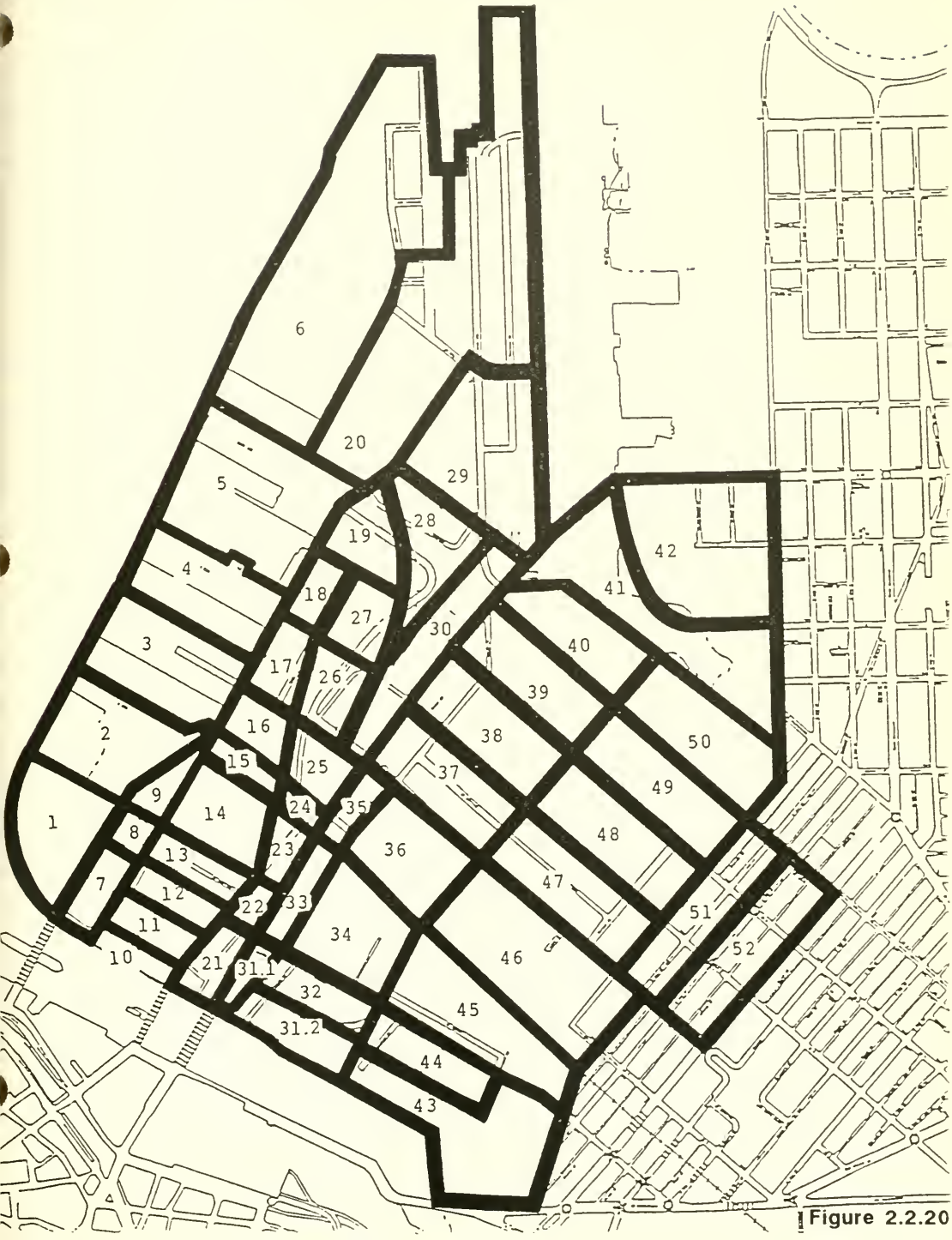


Figure 2.2.20

local street features are not expected to be affected significantly. Most of the latest thinking involves a "fine tuning" of the October, 1988 land use projections. A 10-15 percent shift in assumptions will not affect the basic findings of the year 2010 forecasts. Put another way, while generation rates and overall land use patterns may change from those assumed in this report, the identification of the most effective local street system features contained in this report are not expected to be affected by such changes.

Figure 2.2.20 illustrates the 52 subzones created for the Fort Point Channel/South Boston study area from the original 25 traffic zones set up by the Central Transportation Planning Staff for the Central Artery/Third Harbor Tunnel EIR/EIS studies. The original 25 traffic zones (refer to Technical Memorandum 2.1) were subdivided to allow for more detailed evaluation of local street modifications in the Fort Point Channel/South Boston study area.

Table 2.2.4 summarizes the projected overall change in land use gross floor building area as well as the AM and PM peak period trip making changes within the Fort Point Channel/South Boston study area between 1987 and the year 2010. This tabular summary indicates that, overall, vehicular travel into and out of the study area will approximately double over what it is found today for the land uses within the study area. Person trips, however, will more than double as the area is expected to experience a substantial increase in jobs and a substantial increase in transit utilization over what is found today.

While the overall magnitude of projected AM and PM peak period vehicular and person trip tables are fairly consistent between this study and those being conducted by the Massachusetts Department of Public Works' Central

Table 2.2.4

FORT POINT CHANNEL/SOUTH BOSTON

SUMMARY OF ASSUMPTIONS
OVERALL STUDY AREA BUILDING AREA
AND TRIP GENERATION FOR ALTERNATIVE TRAFFIC FORECASTS*

GROSS FLOOR AREA

Year	Occupied + Unoccupied (millions of gross square feet)	Occupied (millions of gross square feet)
1987	17.2	14.0
2010	32.2	27.0

AM PEAK PERIOD (6:30 - 9:30 AM)

Year	Vehicle Trips In	Out	Total	Growth Ratio	Person Trips Total	Growth Ratio
1987	16,570	9,100	25,670	---	30,800	---
2010	33,780	14,150	47,930	1.9	83,200	2.7

PM PEAK PERIOD (3:30 - 6:30 PM)

Year	Vehicle Trips In	Out	Total	Growth Ratio	Person Trips Total	Growth Ratio
1987	9,670	17,010	26,680	---	32,000	---
2010	15,050	35,800	50,850	1.9	83,200	2.6

* Source: Cambridge Systematics, Inc.

Artery/Third Harbor Tunnel consultant, some differences in how the trips are distributed to the roadway network are expected. These include:

- This study, unlike the MDPW consultant's forecasts, assumes the implementation of the South Boston Residential Neighborhood Transportation Improvement Program (April, 1988) recommendations as well as additional neighborhood traffic controls in the north area of the South Boston residential community. It is expected that long distance commuters will be discouraged from using South Boston streets due to proposed new neighborhood traffic controls which will make shortcutting more circuitous than it is today. The end result of these assumptions is that it tends to increase traffic volumes on the Fort Point Channel bridges and ramps leading into the Fort Point Channel/South Boston industrial area, but lower volumes on South Boston residential streets.

- The MDPW forecasts may assume that the South Boston Bypass Road and Massport Haul Roads are open to general high occupancy vehicle traffic (i.e., trucks, buses, vanpools, carpools of three or more, and taxis). Except for one alternative, this study assumes that trucks, buses, and vanpools only are allowed to use the South Boston Bypass Road. This tends to produce lower traffic volumes on the Bypass Road and higher traffic volumes on the ramps and bridges.

- While the MDPW forecasts may assume single lane approaches to City streets, this study assumes that the Seaport Access Road ramp approaches to City streets will be striped to provide two approach lanes to the signalized intersections at the ramp terminals with the main line. This means that while traffic may be exiting the main line in one lane, it will be processed through the signalized intersections in two lanes to improve the capacity efficiency of the signalized intersections with city streets in the Fort Point Channel/South Boston area. This assumption is made because it is an effective way to 1) reduce traffic queuing on the ramp approaches to

city streets at signalized intersections; 2) to keep regional generated traffic on the regional system by maximizing the capacity of signalized intersections to carry the regionally generated traffic; and 3) reduce traffic in South Boston residential neighborhoods.

Basically, this study assumes that the MDPW will do all it can to ensure that the improved regional transportation system (e.g., the New Northern Avenue bridge and the Seaport Access Road/South Boston Bypass Road) serves regionally-generated traffic and not the residential streets of South Boston.

Overall Study Area Cordon Roadway Capacitiies - Existing and Future

Before addressing the impact of various local roadway modifications, it was first necessary to estimate hourly capacities of the roadway infrastructure at the cordon serving the Fort Point Channel/South Boston study area. The estimates of the existing and future practical roadway capacities are approximate and should be considered as such.

Generally, capacities are assumed to be controlled by street widths and conditions, truck/van volumes, on-street parking and loading conditions, the number of lanes at signalized intersections, and estimated proportions of traffic signal green time at signalized intersections. Free-flow roadway link capacities do not apply to the local streets, ramps and bridges serving the Fort Point Channel/South Boston study area because traffic signal ultimately control the volumes that are processed. Tables 2.2.5 and 2.2.6 summarize estimates of existing and future hourly inbound and outbound capacities assumed for the Fort Point Channel/South Boston study area cordon.

Table 2.2.5

SOUTH BOSTON/FORT POINT CHANNEL AREA

ESTIMATED EXISTING (1988) CORDON CAPACITIES

Public Access	1988 Estimated Inbound Capacity (vph)*
Northern Avenue Bridge (EB)	2100
Congress Street Bridge (EB)	700
Summer Street Bridge (EB)	2100
A Street (NB)	600
C Street (NB)	500
D Street (NB)	900
E Street (NB)	600
L Street (NB)	700
TOTAL	8,200

Public Access	1988 Estimated Outbound Capacity (vph)*
Northern Avenue Bridge (WB)	2100
Congress Street Bridge (WB)	700
Summer Street Bridge (WB)	2100
A Street (SB)	600
D Street (SB)	900
E Street (SB)	600
L Street (SB)	700
TOTAL	7,700

* vph - vehicles per hour. Source: Cambridge Systematics, Inc.

Table 2.2.6

SOUTH BOSTON/FORT POINT CHANNEL AREA

ESTIMATED CONSTRAINED INBOUND FUTURE (2010) CORDON CAPACITIES

Public Access	2010 Estimated Inbound Capacity (vph)	
Northern Avenue Bridge (EB)	2100	
Congress Street Bridge (EB)	700	
Summer Street Bridge (EB)	2100	
A Street (NB)	600	
South Boston Bypass Road (NB)		(800)
First Street EB + WB (due to neighborhood controls)	1200	
L Street (NB)	700	
SUBTOTAL	7,400	
Seaport Access Road Inbound Ramps		
NB off-ramp to 'Flat' Street	2,100	
NB off-ramp to E Street	1,500	
SB off-ramp to B Street	1,500	
SUBTOTAL	5,100	
TOTAL	12,500	(13,300)

Table 2.2.6 (Cont.)

SOUTH BOSTON/FORT POINT CHANNEL AREA

ESTIMATED CONSTRAINED OUTBOUND FUTURE (2010) CORDON CAPACITIES

Public Access	2010 Estimated Outbound Capacity (vph)	
Northern Avenue Bridge (WB)	2100	
Congress Street Bridge (WB)	700	
Summer Street Bridge (WB)	2100	
A Street (SB)	600	
South Boston Bypass Road (SB)		(800)
First Street EB + WB		
(due to assumed neighborhood controls)	1200	
L Street (SB)	700	
SUBTOTAL	7,400	
Seaport Access Road Outbound Ramps		
SB/WB/NB on-ramp from Congress/Sharp (with or without 'GD'*)	1,800	
SB/NB on-ramp from C Street (with or without 'AA'*)	1,500	
'GD'* SB on-ramp from Calvin St. Extension		(1,500)
SUBTOTAL	3,300	(5,600)
TOTAL	10,700 *	(13,000)*

(xxxx) - Capacity added by optional feature

* 'GD' Ramp is proposed by the MDPW to provide southbound and westbound access to the Seaport Access Road. The GD Ramp would be grade separated under Congress Street; east/northbound access to the Seaport Access Road ramp would occur at Congress Street via the MDPW's 'A' Ramp. 'AA' Ramp is a northbound/eastbound truck ramp starting from C Street/Massport Haul Road intersection (currently not precluded by the MDPW), proposed by the City's Central Artery/Third Harbor Tunnel consultant. The ramp is conceptualized as cutting across the Seaport Access Road Flat Street off-ramp via an at-grade signalized intersection.

At present, the cordon servicing the South Boston area is, overall, estimated to be operating at 66 percent of its overall inbound hourly capacity during the AM peak hour and 69 percent of its overall outbound capacity during the PM peak hour.

From Tables 2.2.5 and 2.2.6, it is concluded that the inbound and outbound hourly capacity of study area roadways, ramps, and bridges serving the Fort Point Channel/South Boston area cordon will increase by about 65 percent between 1987 and the year 2010 from about 8,200 vehicles per hour to about 13,000 vehicles per hour in each direction.

Because inbound and outbound roadway capacities are ultimately governed by intersection signal operations, there is the potential that they will be somewhat higher or lower than reported in this study, perhaps by as much as 10-15 percent. When a "consensus" Fort Point Channel/South Boston local street system is selected by the Boston Transportation Department (following an intensive public review of these findings), more accurate capacity estimates for the "consensus" alternative based on detailed analysis of critical intersections will be made at that time in accordance with the procedures outlined in the 1985 Highway Capacity Manual (Transportation Research Board Special Report 209). Please note that the accuracy of the TRANPLAN model is more appropriately applied to cordon analyses rather than individual link and intersection analyses.

Future Base Condition - Alternative 0

Figure 2.2.21 illustrates Alternative 0, the future base condition alternative against which all other alternatives were compared. Alternative 0

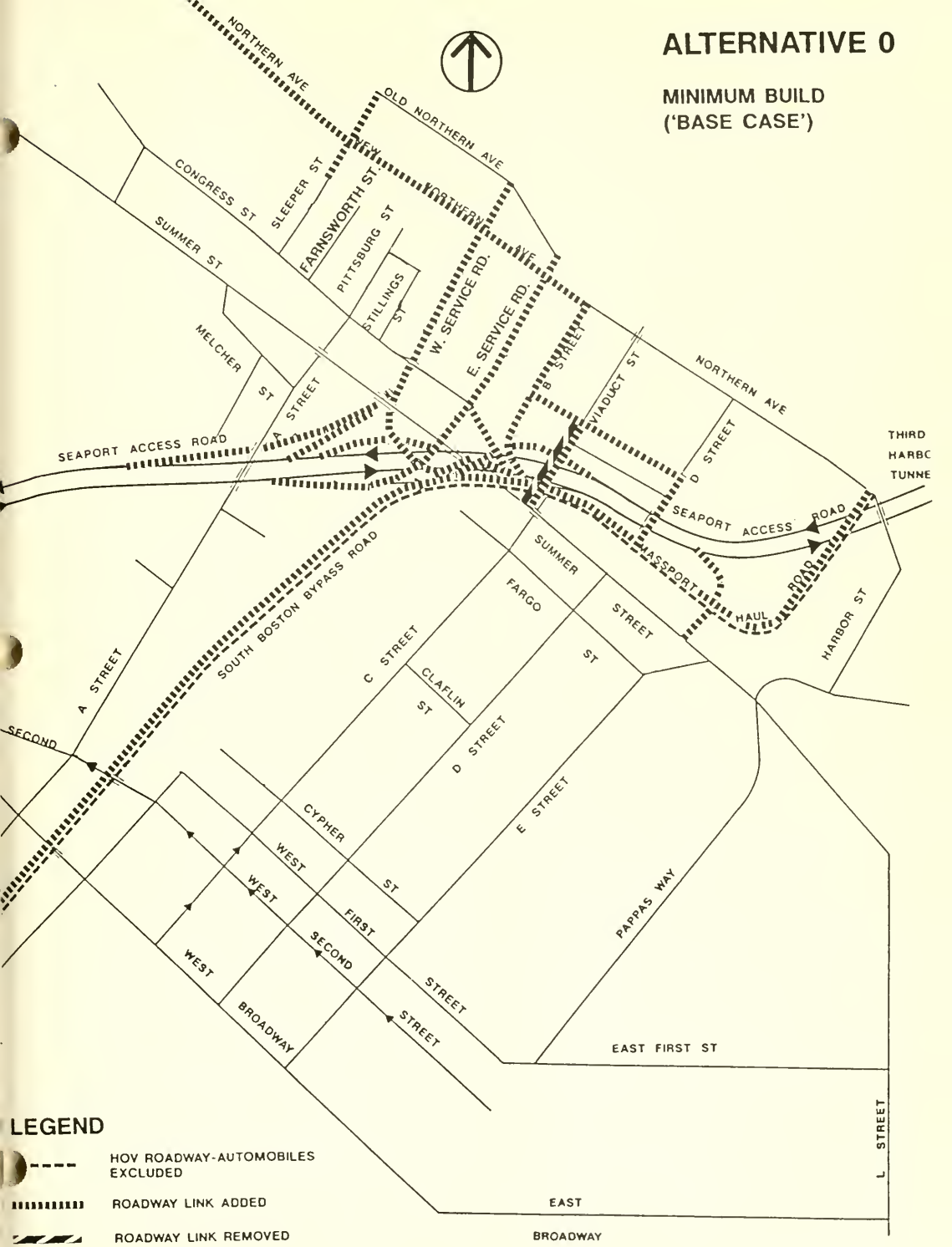

ALTERNATIVE 0
MINIMUM BUILD
('BASE CASE')
NORTHERN AVE
OLD NORTHERN AVE
CONGRESS ST
SLEEPER ST
FARNSWORTH ST
SUMMER ST
PITTSBURG ST
STILLINGS ST
W. SERVICE RD.
E. SERVICE RD.
B STREET
VIADUCT ST
NORTHERN AVE
MELCHER ST
T STREET
SEAPORT ACCESS ROAD
D STREET
THIRD
HARBC
TUNNE
SEAPORT ACCESS ROAD
SOUTH BOSTON BYPASS ROAD
SUMMER
FARGO
STREET
HAUL ROAD
HARBOR ST
A STREET
C STREET
CLAFLIN ST
SECOND
D STREET
E STREET
CYPHER ST
WEST
WEST
FIRST
SECOND STREET
WEST BROADWAY
PAPPAS WAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

Figure 2.2.21

is not a no build, but a programmed build of regional roadway infrastructure investments already underway or expected to be developed in any event. They include:

- The construction of the Seaport Access Road and ramps configured as of October, 1988 including proposed improvements to the Massport Haul Road (Note: Alternative 0 does not assume the post-October, 1988 'GD' ramp under Congress Street);

- The construction of the South Boston Bypass Road between the Southeast Expressway and the Massport Haul Road with connections to the Seaport Access Road;

- The construction of New Northern Avenue between Atlantic Avenue in downtown Boston and B Street;

- The construction of "New Ramp Street", the straightening of Viaduct Street over C Street, the construction of a New Street (in the Congress Street Extension alignment) between B Street and Racin Street, the extension of Racin Street (or D Street) between New Street and the Massport Haul Road, a connection between B Street and the Massport Haul Road, and improvements to B Street on Massport properties.

- Neighborhood traffic controls recommended in the Boston Transportation Department's South Boston Neighborhood Transportation Program (BSC Engineering, Cambridge Systematics, Inc., December, 1987) were assumed to be implemented.

The traffic analysis of Alternative 0 also assumes that significant new BTA transit services will be available to the Fort Point Channel/South Boston area as well as traffic demand management techniques such as a parking constraints, ridesharing and vanpooling incentives, etc. to create a 55 percent transit mode share north of Summer Street and a 34 percent mode share south of Summer Street during peak hours. The TRANPLAN model handles ridesharing (carpool/vanpool) modal shares separately.

Figures 2.2.22 and 2.2.23 illustrate projected AM and PM peak hour traffic volumes associated with Alternative 0. Figures 2.2.24 and 2.2.25 illustrate the roadway links where LOS E-F traffic conditions are predicted in the study area with Alternative 0 in the year 2010.

Sensitivity Analyses

To compare local street build alternatives with Alternative 0, it was necessary to identify various optional local street build features which both FST and the BTD agreed would have an impact on traffic operating conditions. To that end, a total of 11 alternatives were developed by FST and the Boston Transportation Department for analysis by Cambridge Systematics, Inc. A summary of the evaluated local street build options is provided on the page that follows. The local street build options are illustrated in Figures 2.2.26 through 2.2.36.

SUMMARY LIST OF EVALUATED LOCAL STREET BUILD OPTIONS

1 - Full-Build - High HOV/Transit Use (55 % north of Summer/34 % south of Summer)

1A - Full-Build - Low HOV/Transit Use (25 % north of Summer/17 % south of Summer)

1B - Full-Build with Massport Haul Road Open to General Traffic

1C - Full-Build without D Street between Summer Street and Massport Haul Road

1D - Full-Build without new South Boston Neighborhood Traffic Controls

1E - Full-Build without Congress Street or Calvin Street Extensions

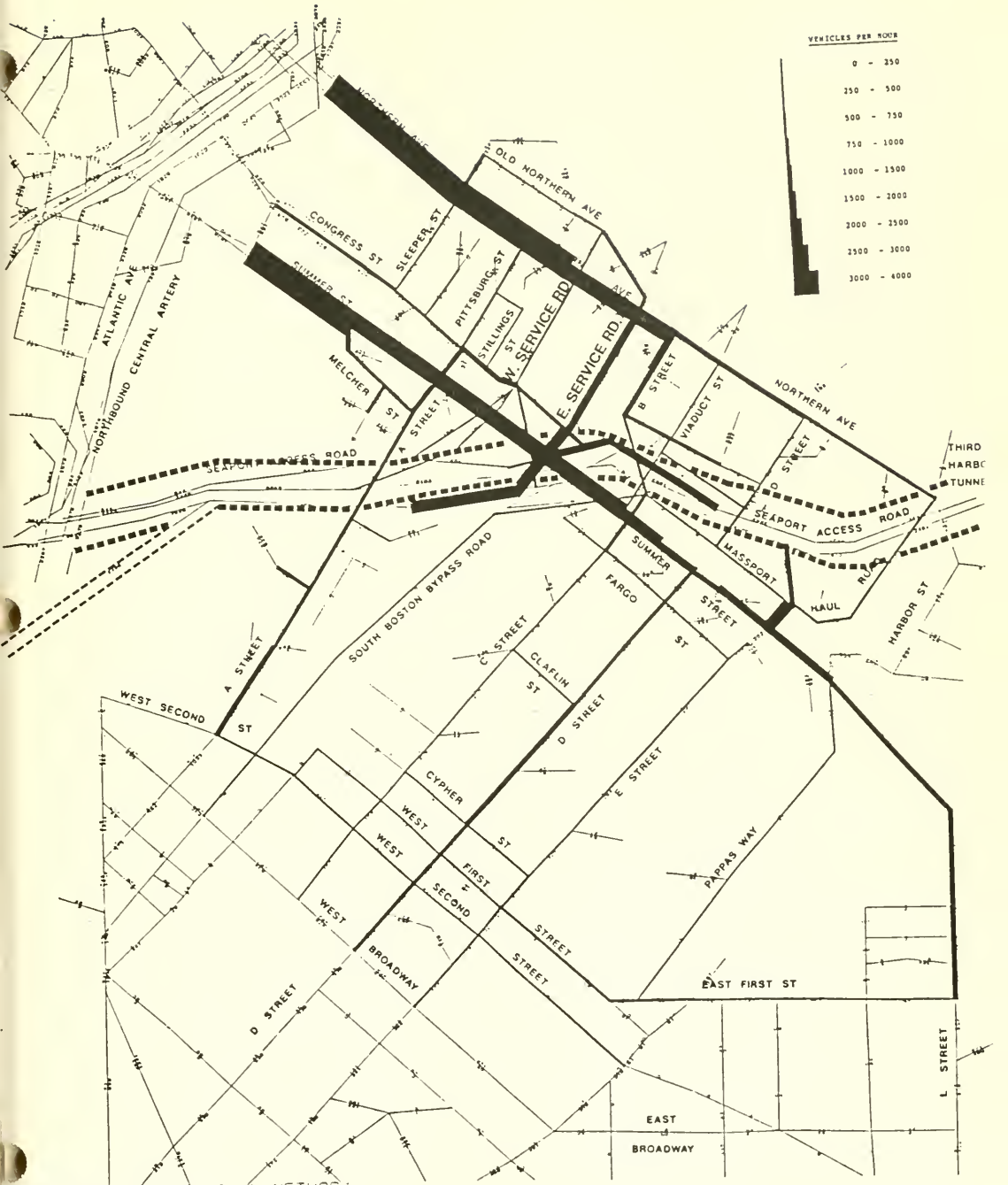
1F - Full-Build with South Boston Bypass and Massport Haul Roads open to General HOV traffic

1G - Full-Build with Dorchester Avenue Open to General Traffic

1H - Full-Build with Exclusive Truck/HOV (So-called "AA") Northbound Ramp

1I - Full-Build with Relocated Combined HOV/general Traffic Southwestbound (So-called "G/D") Ramp

1HI- Full-Build with both "AA" and "G/D" Ramps

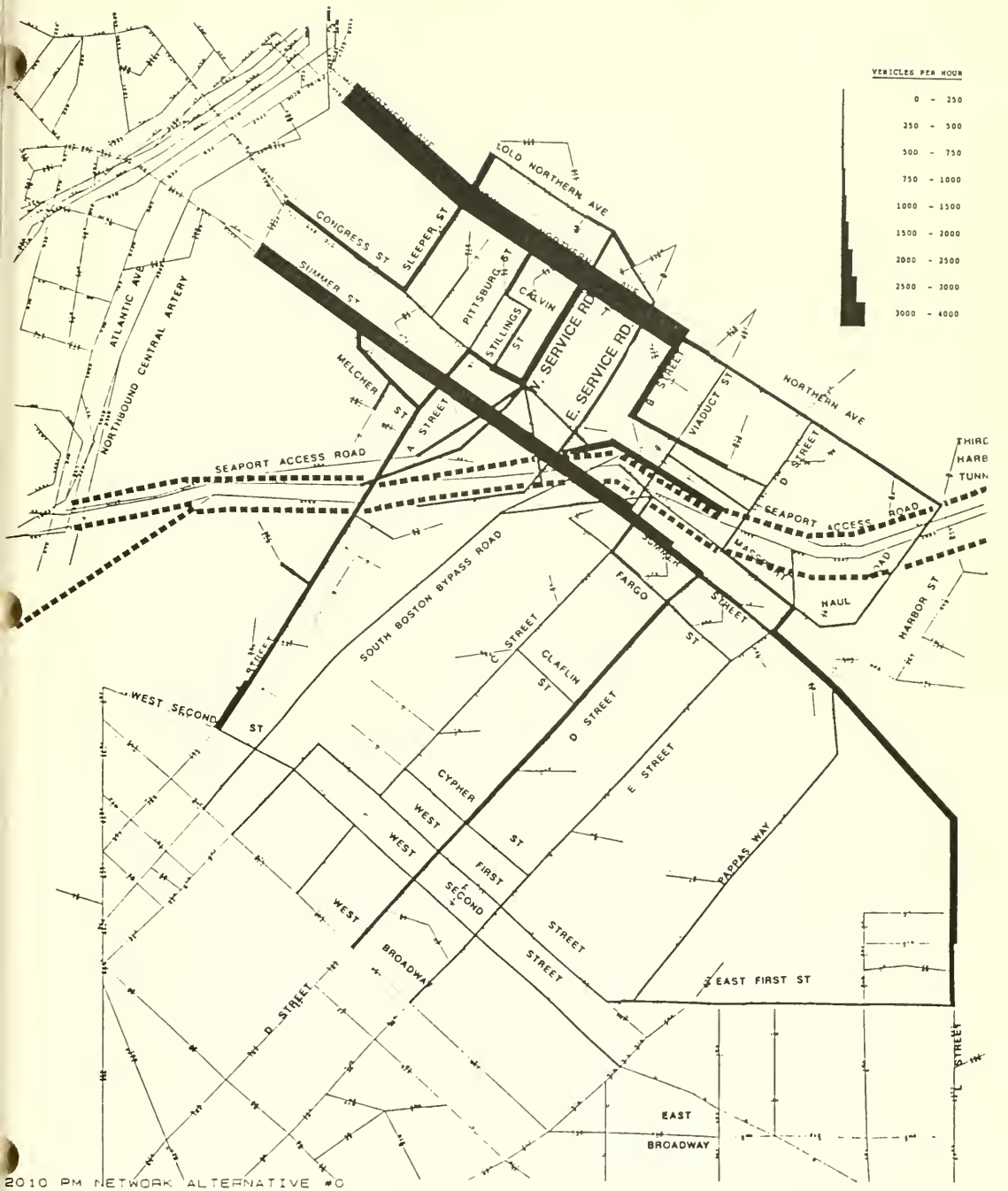


ALTERNATIVE =0 2010 AM NETWORK
VOLUMES REPORTED
FEBRUARY 15, 1989 --- SOD

15FEB89 17.56.19

0-MINIMUM BUILD ("BASE CASE")

Figure 2.2.22

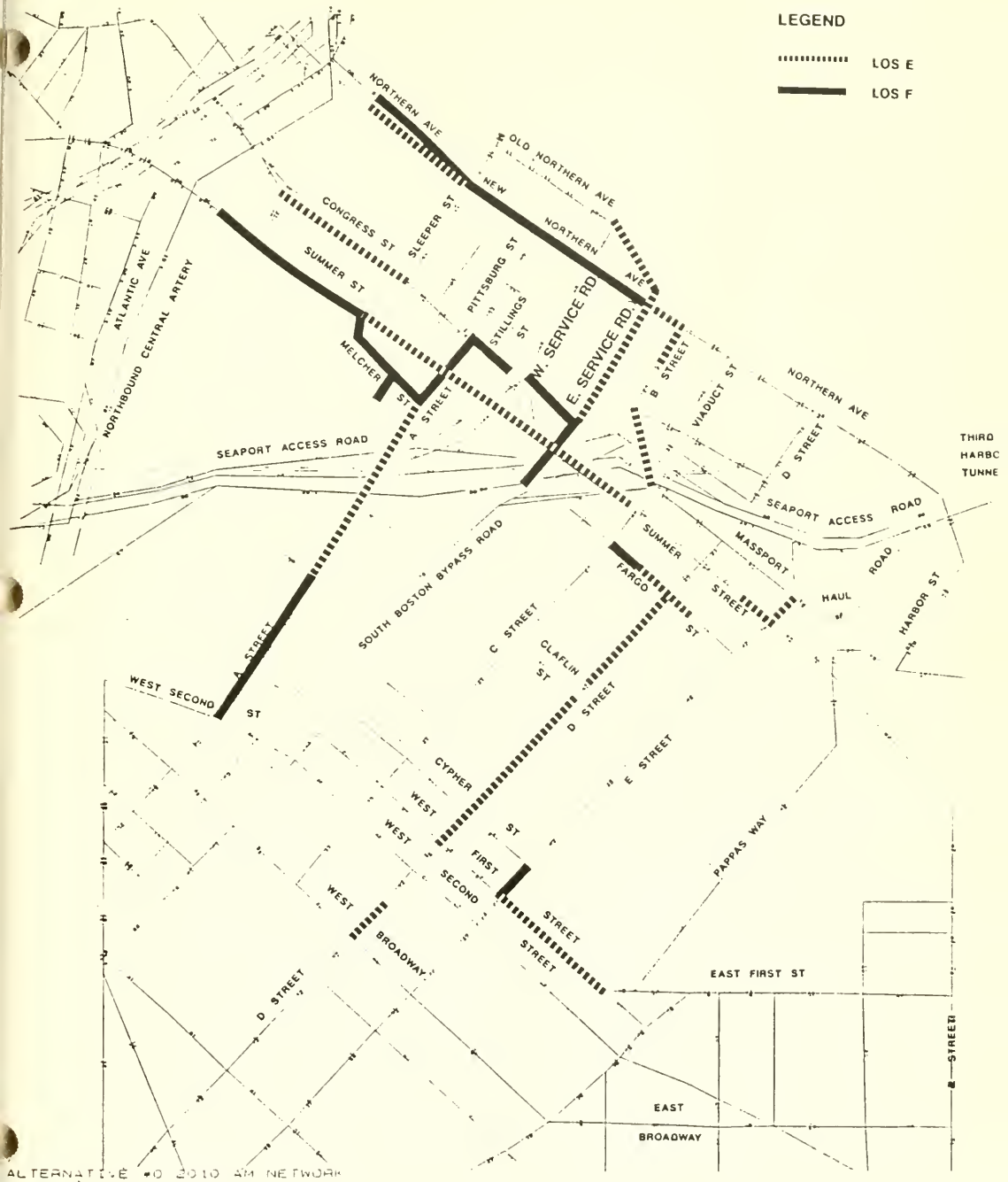


2010 PM NETWORK ALTERNATIVE #0
VOLUMES REPORTED
FEBRUARY 17 1989 --- SDD

17FEB89 12 09 50

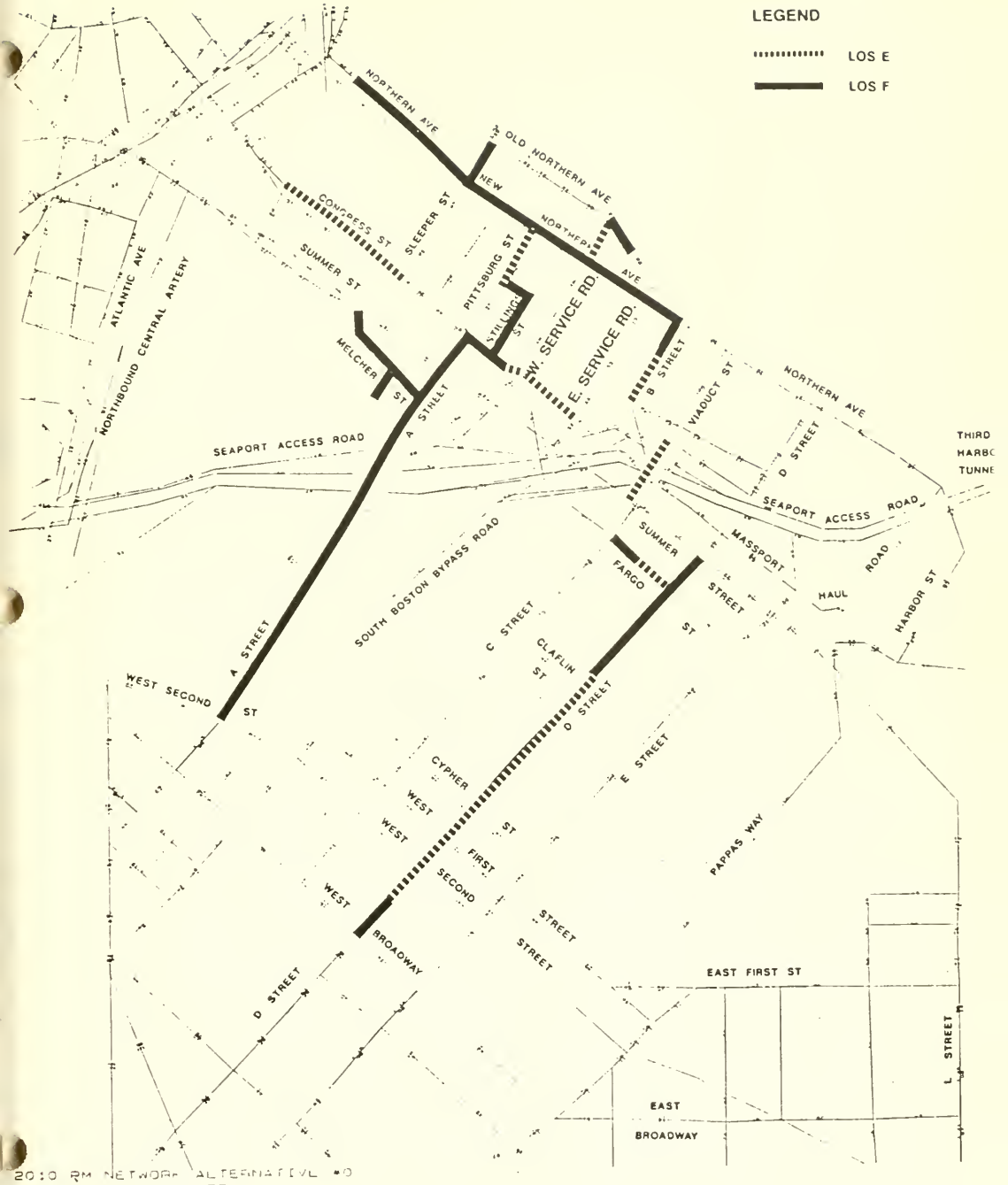
0-MINIMUM BUILD ("BASE CASE")

Figure 2.2.23



O - MINIMUM BUILD ("BASE CASE")

Figure 2.2.24



2010 RM NETWORK ALTERNATIVE #0
V/C RATIOS REPORTED
FEBRUARY 17 1989 --- 500

17FEB89 12 10 42

O - MINIMUM BUILD ("BASE CASE")

Figure 2.2.25

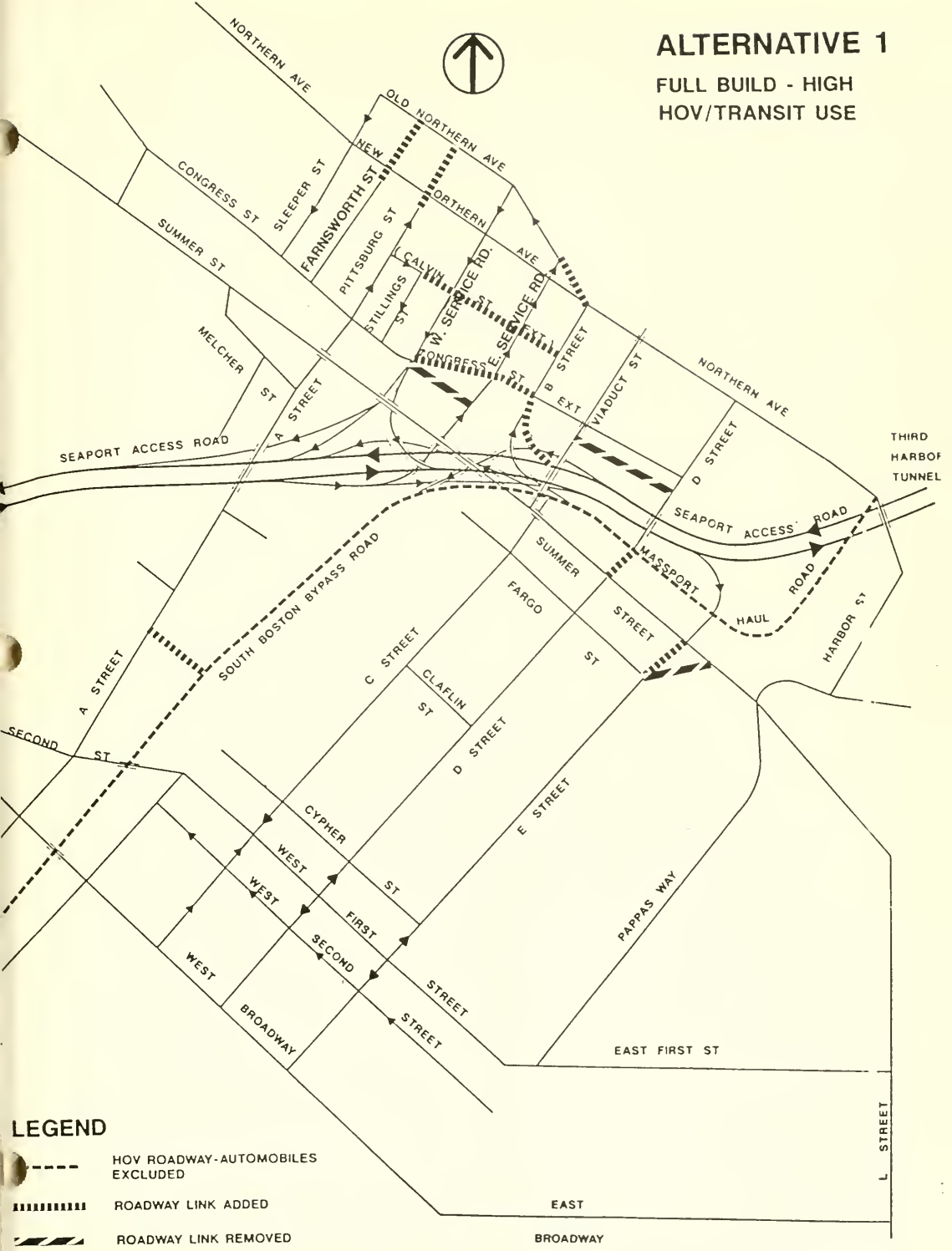

ALTERNATIVE 1
FULL BUILD - HIGH
HOV/TRANSIT USE
NORTHERN AVE
OLD NORTHERN AVE
NEW NORTHERN AVE
CONGRESS ST
SLEEPER ST
FARNSWORTH ST
PITTSBURG ST
STILLINGS ST
CALVIN ST
W. SERVICE RD.
E. SERVICE RD.
SUMMER ST
MELCHER ST
A STREET
CONGRESS ST
B STREET
B EXT
VIADUCT ST
D STREET
SEAPORT ACCESS ROAD
THIRD HARBOR TUNNEL
SOUTH BOSTON BYPASS ROAD
SUMMER STREET
FARGO ST
C STREET
CLAFLIN ST
HASSPORT HAUL ROAD
HARBOR ST
SECOND ST
CYPHER ST
WEST FIRST ST
WEST SECOND STREET
WEST BROADWAY
E STREET
PAPPAS WAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

Figure 2.2.26

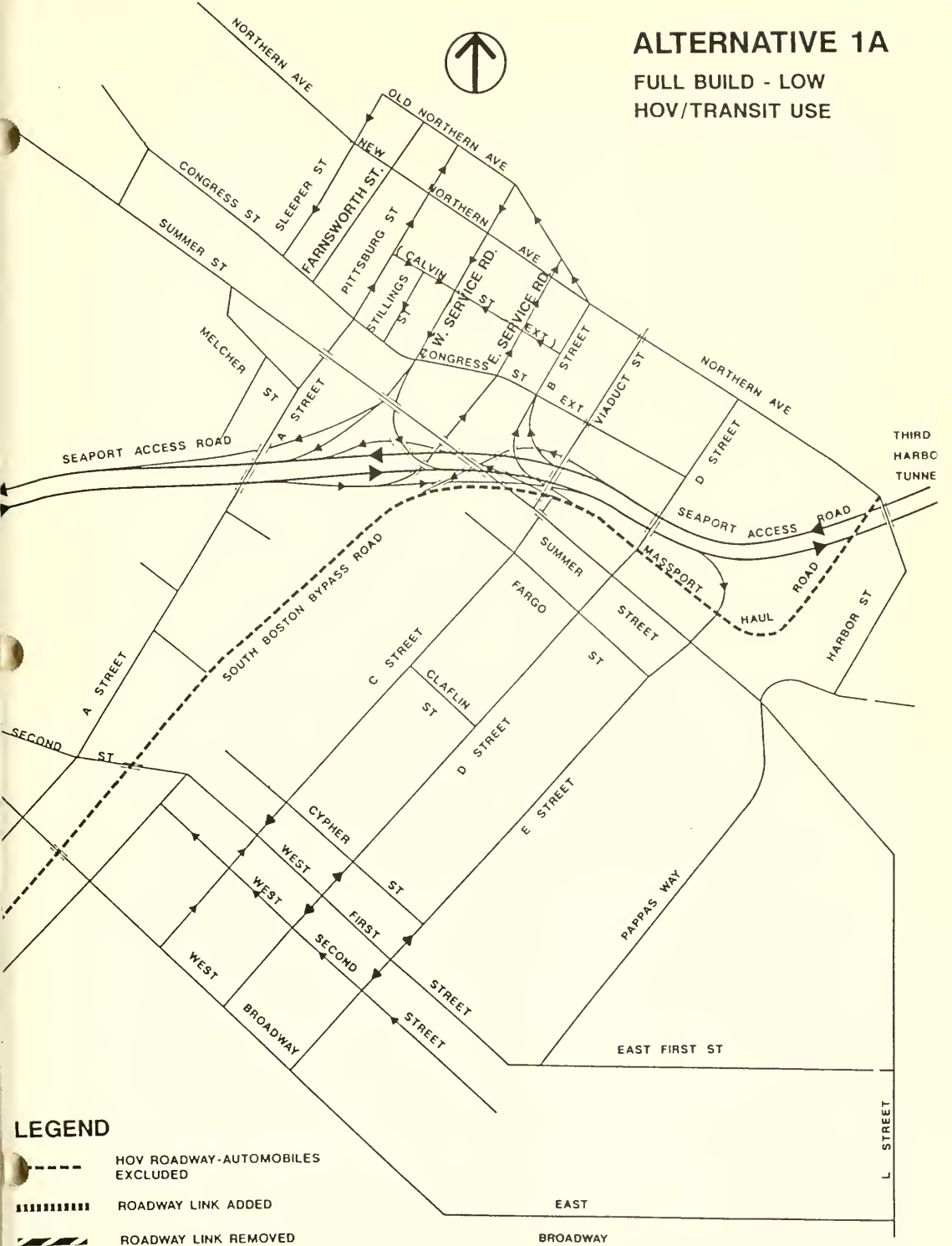

ALTERNATIVE 1A
FULL BUILD - LOW
HOV/TRANSIT USE
NORTHERN AVE
OLD NORTHERN AVE
NEW NORTHERN AVE
CONGRESS ST
SLEEPER ST
FARNSWORTH ST.
SUMMER ST
PITTSBURG ST
STILLINGS ST
CALVIN ST
W. SERVICE RD.
E. SERVICE RD.
CONGRESS ST
B STREET EXT
VIADUCT ST
MELCHER ST
A STREET
SEAPORT ACCESS ROAD
D STREET
THIRD HARBO TUNNE
SEAPORT ACCESS ROAD
SOUTH BOSTON BYPASS ROAD
SUMMER STREET
MASSPORT HAUL ROAD
HARBOR ST
FARGO ST
C STREET
CLAFLIN ST
D STREET
E STREET
A STREET
SECOND ST
CYPHER ST
WEST FIRST STREET
WEST SECOND STREET
WEST BROADWAY
PAPPAS WAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

Figure 2.2.27

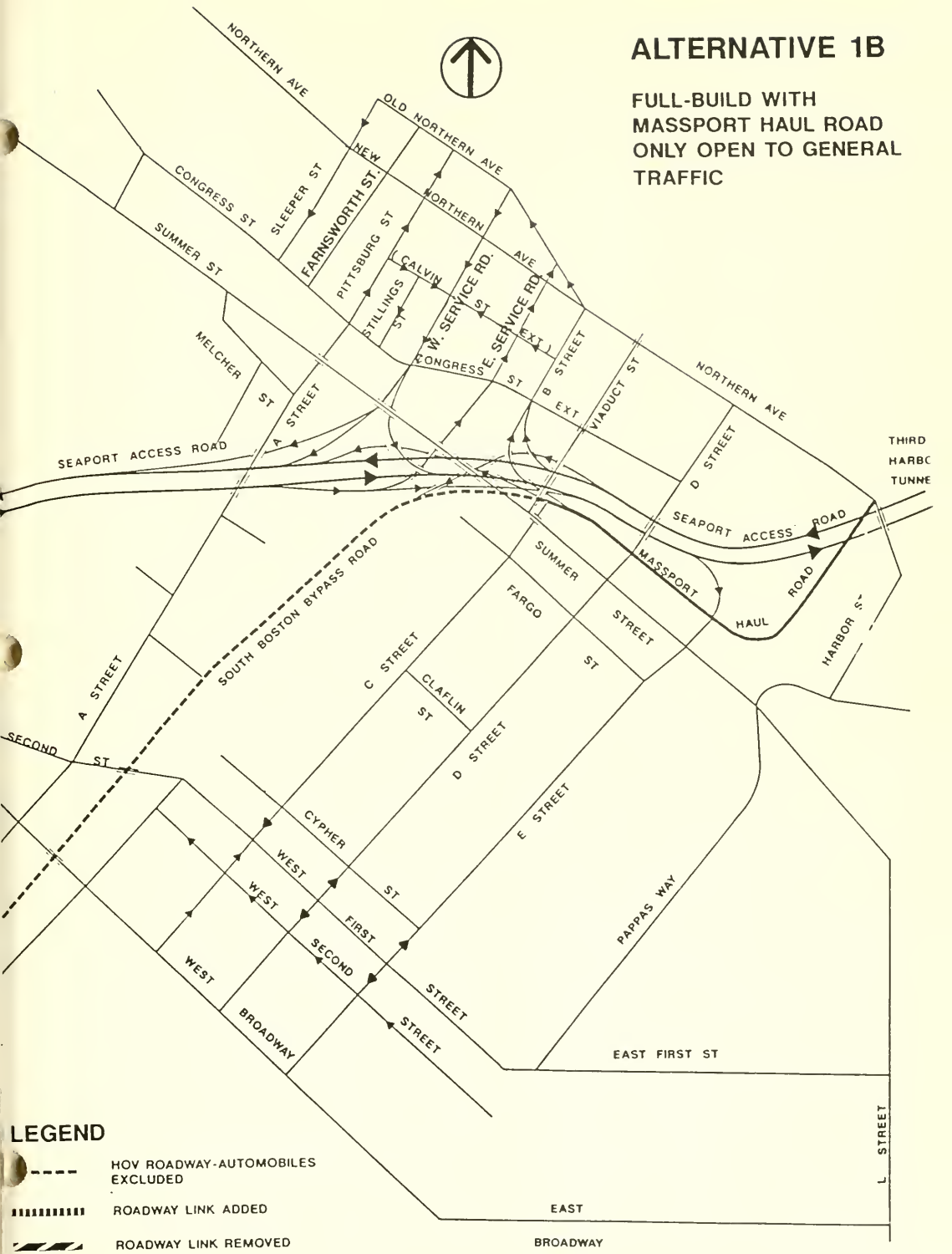

ALTERNATIVE 1B
FULL-BUILD WITH MASSPORT HAUL ROAD ONLY OPEN TO GENERAL TRAFFIC
NORTHERN AVE
OLD NORTHERN AVE
NEW FARNSWORTH ST.
CONGRESS ST
SLEEPER ST
SUMMER ST
NORTHERN AVE
PITTSBURG ST
CALVIN ST
S.TILLINGS ST
W. SERVICE RD.
E. SERVICE RD.
CONGRESS ST
B STREET
B EXT
VIADUCT ST
NORTHERN AVE
MELCHER ST
A STREET
SEAPORT ACCESS ROAD
D STREET
SEAPORT ACCESS ROAD
MASSPORT HAUL ROAD
THIRD HARBC TUNNE
SUMMER STREET
FARGO ST
HARBOR S
SOUTH BOSTON BYPASS ROAD
A STREET
C STREET
CLAFLIN ST
D STREET
SECOND ST
CYPHER ST
WEST FIRST STREET
WEST SECOND STREET
WEST BROADWAY
E STREET
PAPPAS WAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

Figure 2.2.28

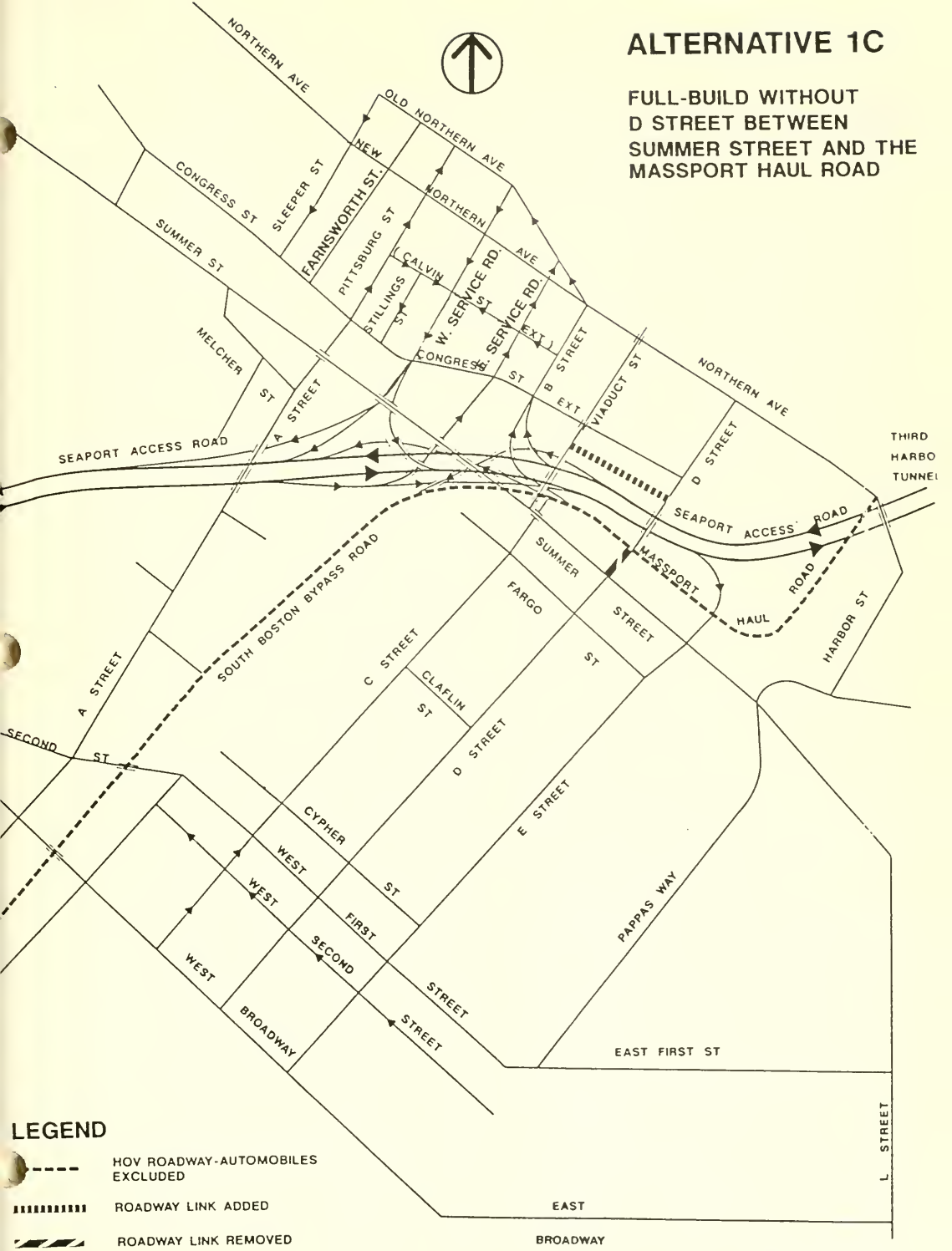

ALTERNATIVE 1C
FULL-BUILD WITHOUT D STREET BETWEEN SUMMER STREET AND THE MASSPORT HAUL ROAD
NORTHERN AVE
OLD NORTHERN AVE
NEW NORTHERN AVE
CONGRESS ST
SLEEPER ST
FARNSWORTH ST.
SUMMER ST
PITTSBURG ST
STILLINGS ST
CALVIN ST
W. SERVICE RD.
E. SERVICE RD.
CONGRESS ST
B STREET EXT.
VIADUCT ST
MELCHER ST
A STREET
SEAPORT ACCESS ROAD
D STREET
THIRD HARBO TUNNEL
SEAPORT ACCESS ROAD
MASSPORT HAUL ROAD
HARBOR ST
SOUTH BOSTON BYPASS ROAD
SUMMER STREET
FARGO ST
C STREET
CLAFLIN ST
D STREET
E STREET
PAPPAS WAY
SECOND ST
CYPHER ST
WEST FIRST STREET
WEST SECOND STREET
WEST BROADWAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

Figure 2.2.29

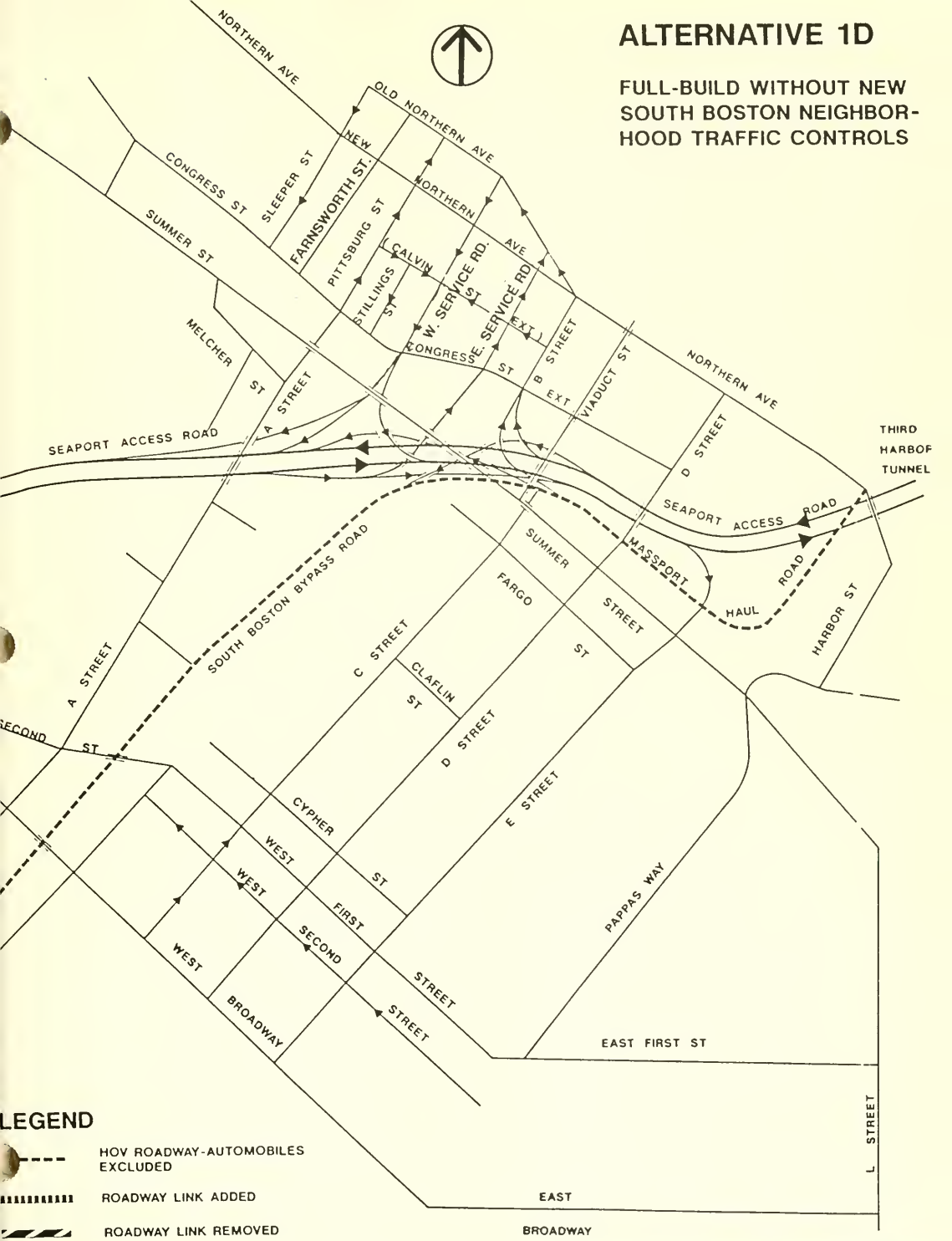

ALTERNATIVE 1D
FULL-BUILD WITHOUT NEW SOUTH BOSTON NEIGHBORHOOD TRAFFIC CONTROLS
NORTHERN AVE
OLD NORTHERN AVE
NEW
FARNSWORTH ST.
SLEEPER ST
CONGRESS ST
SUMMER ST
PITTSBURG ST
NORTHERN AVE
CALVIN ST
STILLINGS ST
W. SERVICE RD.
E. SERVICE RD.
EXT.
CONGRESS ST
MELCHER ST
A STREET
B STREET
VIADUCT ST
NORTHERN AVE
D STREET
SEAPORT ACCESS ROAD
THIRD HARBOR TUNNEL
SEAPORT ACCESS ROAD
SUMMER STREET
FARGO ST
MASSPORT HAUL ROAD
HARBOR ST
SOUTH BOSTON BYPASS ROAD
A STREET
C STREET
CLAFLIN ST
D STREET
SECOND ST
CYPHER ST
E STREET
WEST FIRST STREET
WEST SECOND STREET
WEST BROADWAY
PAPPAS WAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

Figure 2.2.30

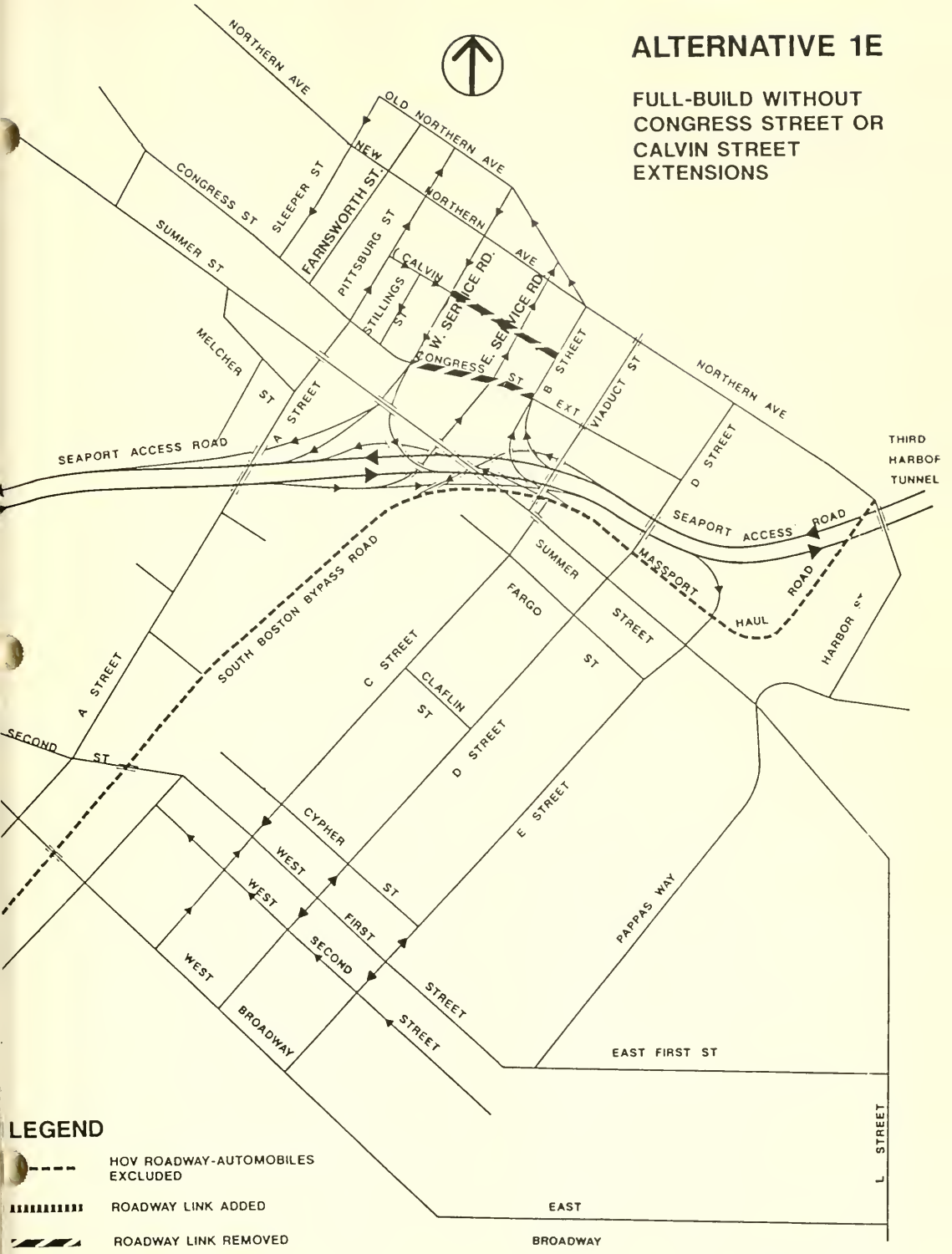

ALTERNATIVE 1E
FULL-BUILD WITHOUT CONGRESS STREET OR CALVIN STREET EXTENSIONS
NORTHERN AVE
OLD NORTHERN AVE
NEW FARNSWORTH ST.
CONGRESS ST
SLEEPER ST
SUMMER ST
NORTHERN AVE
PITTSBURG ST
TILLINGS ST
CALVIN
W. SERVICE RD.
E. SERVICE RD.
CONGRESS ST
B STREET
VIADUCT ST
NORTHERN AVE
MELCHER ST
A STREET
SEAPORT ACCESS ROAD
D STREET
THIRD HARBOR TUNNEL
SEAPORT ACCESS ROAD
SUMMER
FARGO
STREET
MASSPORT
HAUL ROAD
HARBOR ST
SOUTH BOSTON BYPASS ROAD
A STREET
C STREET
CLAFLIN ST
D STREET
SECOND ST
CYPHER ST
E STREET
PAPPAS WAY
WEST
FIRST
SECOND
STREET
BROADWAY
EAST FIRST ST
L STREET
EAST
BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

Figure 2.2.31

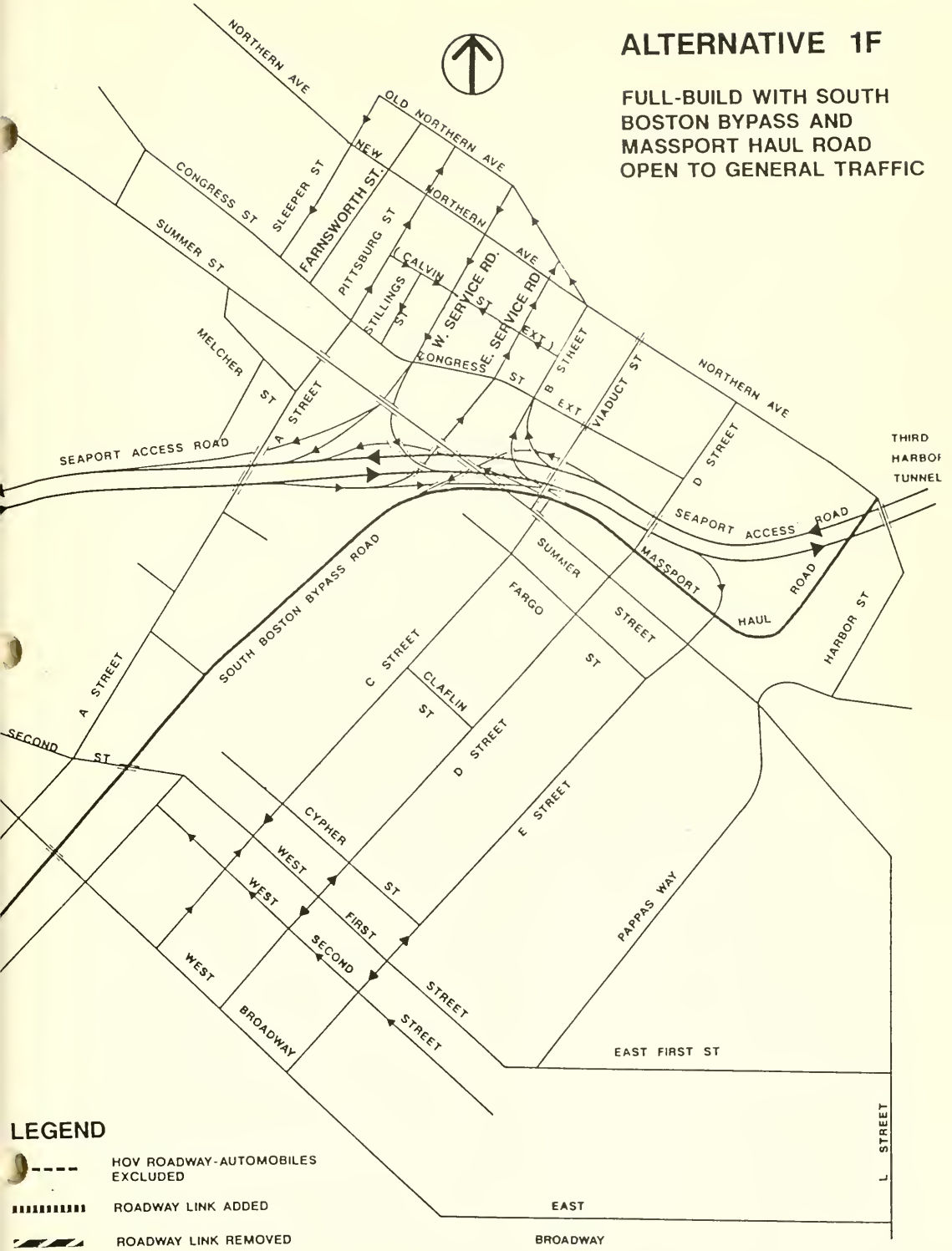

ALTERNATIVE 1F
FULL-BUILD WITH SOUTH BOSTON BYPASS AND MASSPORT HAUL ROAD OPEN TO GENERAL TRAFFIC
NORTHERN AVE
OLD NORTHERN AVE
NEW FARNSWORTH ST.
CONGRESS ST
SLEEPER ST
SUMMER ST
PITTSBURG ST
STILLINGS ST
CALVIN ST
W. SERVICE RD.
E. SERVICE RD.
CONGRESS ST
B STREET EXT
VIADUCT ST
NORTHERN AVE
MELCHER ST
A STREET
SEAPORT ACCESS ROAD
D STREET
THIRD HARBOR TUNNEL
SEAPORT ACCESS ROAD
SUMMER STREET
MASSPORT HAUL ROAD
HARBOR ST
SOUTH BOSTON BYPASS ROAD
A STREET
C STREET
FARGO ST
CLAFLIN ST
D STREET
SECOND ST
CYPHER ST
E STREET
PAPPAS WAY
WEST FIRST STREET
WEST SECOND STREET
WEST BROADWAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

Figure 2.2.32

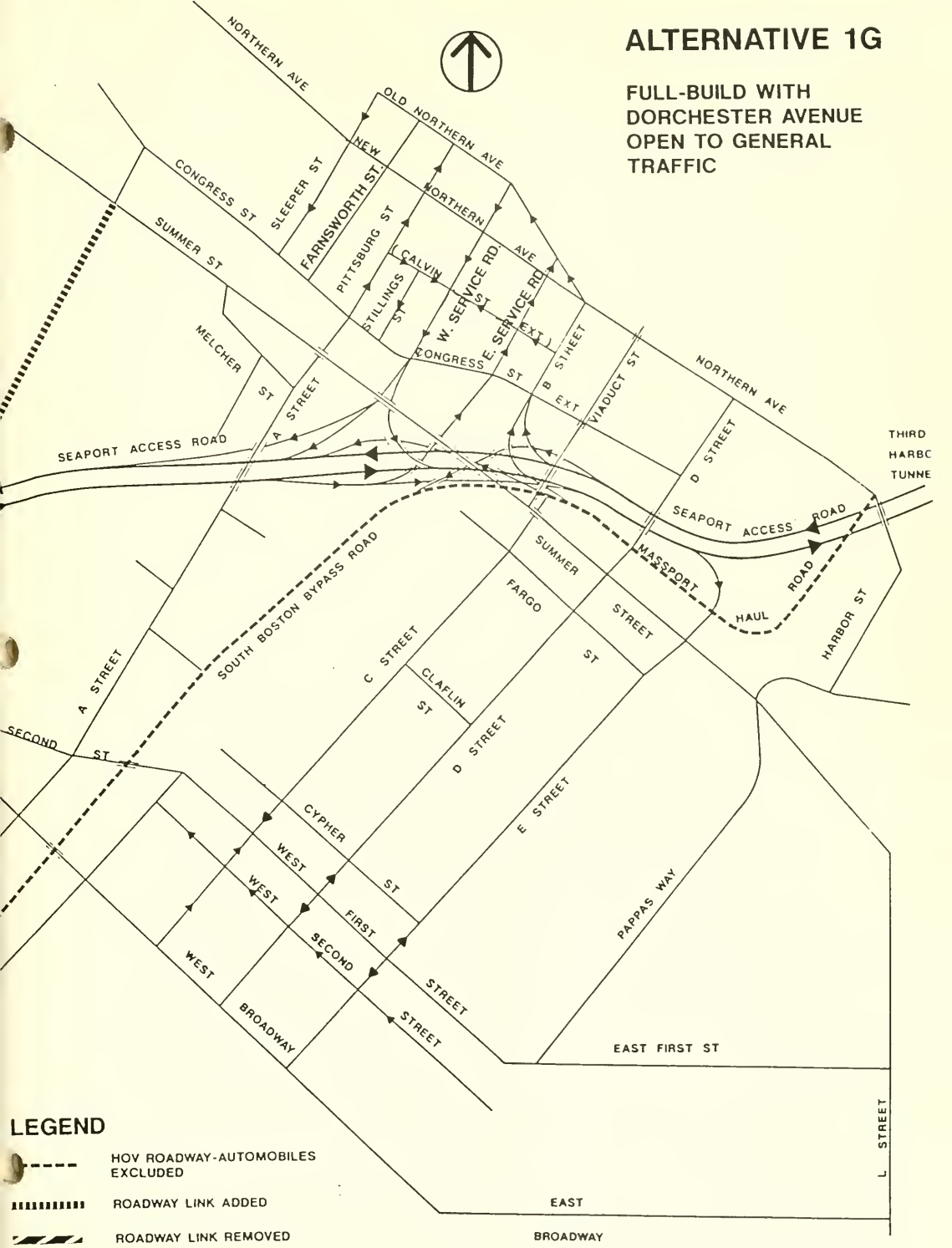

ALTERNATIVE 1G
FULL-BUILD WITH DORCHESTER AVENUE OPEN TO GENERAL TRAFFIC
NORTHERN AVE
OLD NORTHERN AVE
NEW NORTHERN AVE
CONGRESS ST
SLEEPER ST
FARNSWORTH ST.
SUMMER ST
PITTSBURG ST
STILLINGS ST
CALVIN ST
W. SERVICE RD
E. SERVICE RD
CONGRESS ST
B STREET EXT
VIADUCT ST
NORTHERN AVE
MELCHER ST
A STREET
SEAPORT ACCESS ROAD
D STREET
THIRD HARBC TUNNE
SEAPORT ACCESS ROAD
SOUTH BOSTON BYPASS ROAD
SUMMER STREET
FARGO ST
MASSPORT HAUL ROAD
HARBOR ST
C STREET
CLAFLIN ST
A STREET
SECOND ST
D STREET
E STREET
CYPHER ST
WEST FIRST STREET
WEST SECOND STREET
WEST BROADWAY
PAPPAS WAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

Figure 2.2.33

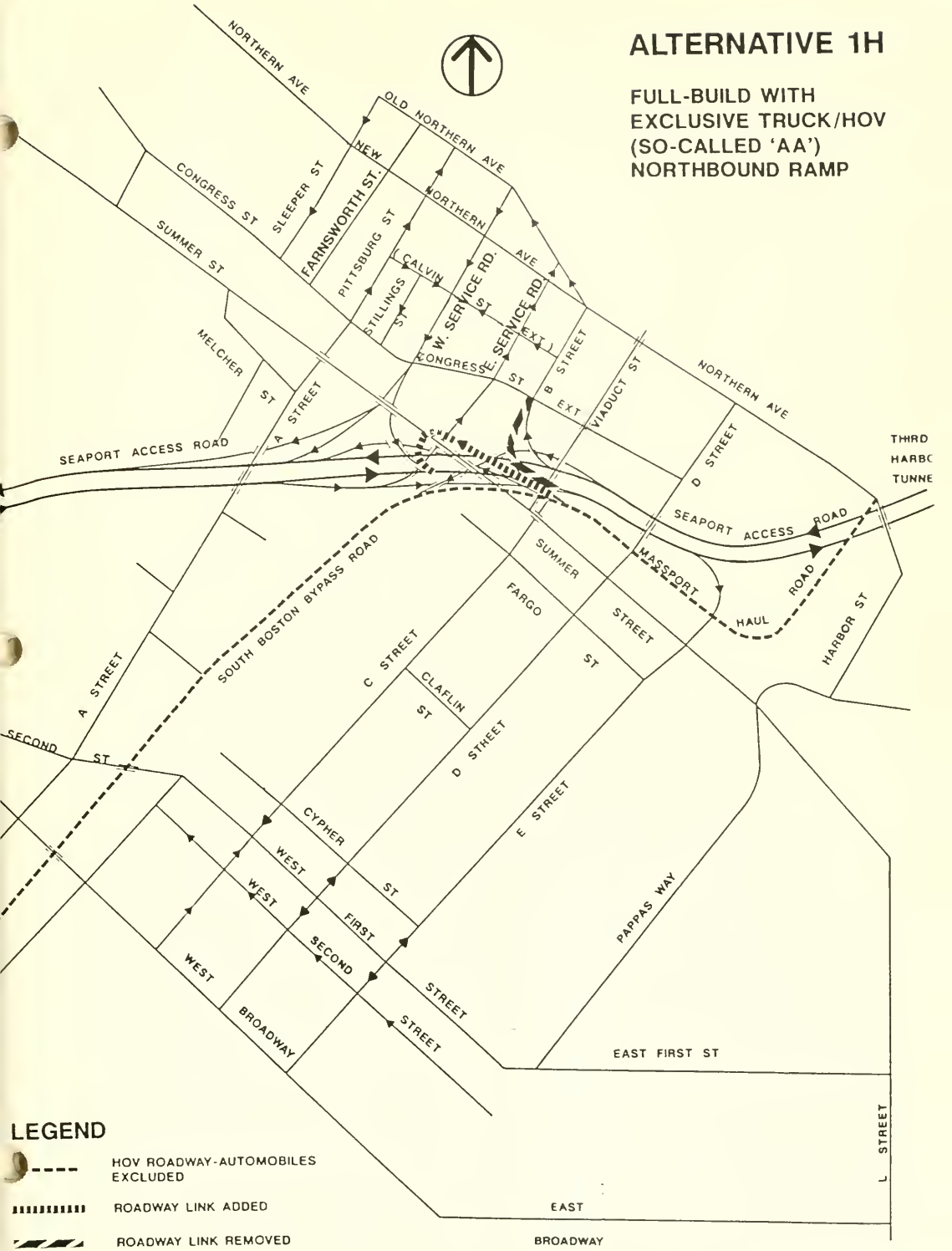

ALTERNATIVE 1H
FULL-BUILD WITH EXCLUSIVE TRUCK/HOV (SO-CALLED 'AA') NORTHBOUND RAMP
NORTHERN AVE
OLD NORTHERN AVE
NEW FARNSWORTH ST.
CONGRESS ST
SLEEPER ST
SUMMER ST
PITTSBURG ST
STILLINGS ST
CALVIN ST
W. SERVICE RD.
E. SERVICE RD.
EXT
B STREET
VIADUCT ST
NORTHERN AVE
MELCHER ST
A STREET
SEAPORT ACCESS ROAD
D STREET
SEAPORT ACCESS ROAD
SUMMER STREET
MASSPORT HAUL ROAD
HARBOR ST
SOUTH BOSTON BYPASS ROAD
FARGO ST
C STREET
CLAFLIN ST
D STREET
E STREET
PAPPAS WAY
SECOND ST
CYPHER ST
WEST FIRST STREET
WEST SECOND STREET
WEST BROADWAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

Figure 2.2.34

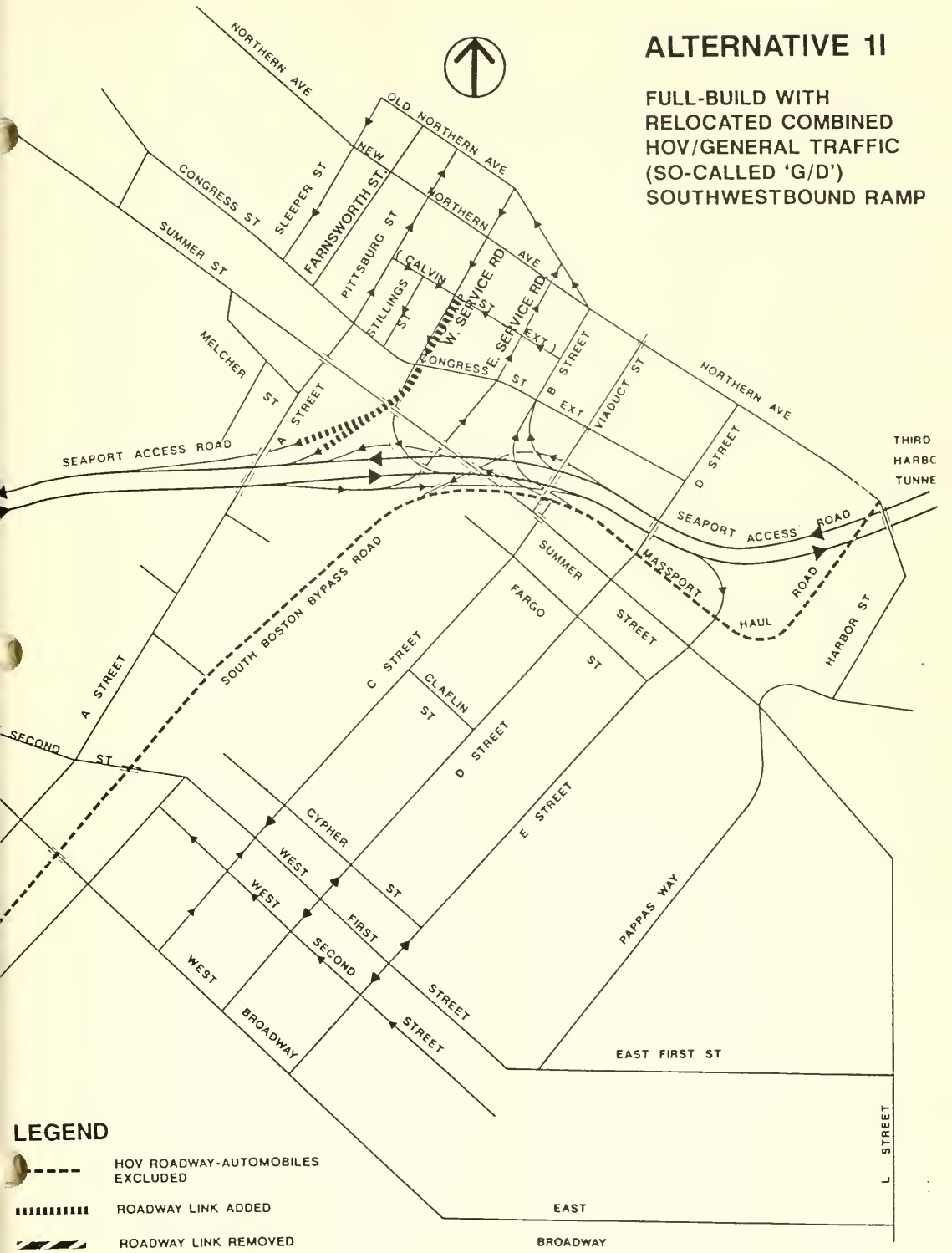

ALTERNATIVE 1I
FULL-BUILD WITH RELOCATED COMBINED HOV/GENERAL TRAFFIC (SO-CALLED 'G/D') SOUTHWESTBOUND RAMP
NORTHERN AVE
OLD NORTHERN AVE
NEW NORTHERN AVE
CONGRESS ST
SLEEPER ST
FARNSWORTH ST
SUMMER ST
PITTSBURG ST
STILLINGS ST
CALVIN ST
W. SERVICE RD
E. SERVICE RD
CONGRESS ST
B STREET EXT
VIADUCT ST
MELCHER ST
A STREET
SEAPORT ACCESS ROAD
D STREET
THIRD HARBC TUNNE
SOUTH BOSTON BYPASS ROAD
SUMMER STREET
FARGO ST
WASSPORT HAUL ROAD
HARBOR ST
C STREET
CLAFLIN ST
SECOND ST
D STREET
E STREET
CYPHER ST
WEST FIRST STREET
WEST SECOND STREET
WEST BROADWAY
PAPPAS WAY
EAST FIRST ST
L STREET
EAST BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

Figure 2.2.35

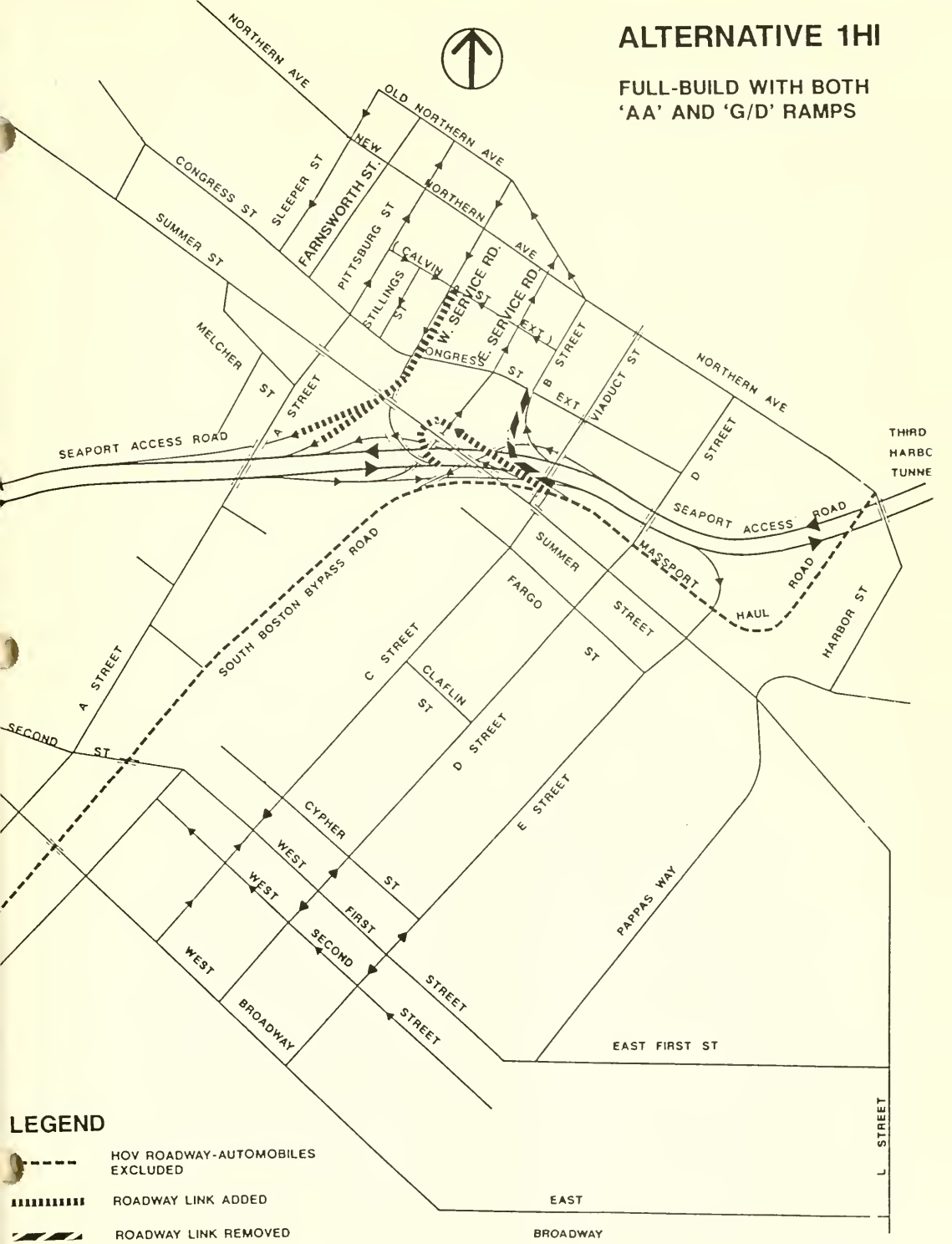

ALTERNATIVE 1HI
FULL-BUILD WITH BOTH
'AA' AND 'G/D' RAMPS
NORTHERN AVE
OLD NORTHERN AVE
NEW
CONGRESS ST
SLEEPER ST
FARNSWORTH ST.
NORTHERN AVE
SUMMER ST
PITTSBURG ST
CALVIN
STILLINGS ST
W. SERVICE RD.
E. SERVICE RD
EXT
B STREET
VIADUCT ST
NORTHERN AVE
MELCHER ST
A STREET
CONGRESS ST
SEAPORT ACCESS ROAD
D STREET
THIRD HARBC TUNNE
SEAPORT ACCESS ROAD
SOUTH BOSTON BYPASS ROAD
SUMMER
FARGO
STREET
MASSPORT
HAUL ROAD
HARBOR ST
A STREET
C STREET
CLAFLIN ST
SECOND ST
D STREET
E STREET
CYPHER ST
WEST
FIRST
SECOND
STREET
PAPPAS WAY
BROADWAY
EAST FIRST ST
L STREET
EAST
BROADWAY
LEGEND
HOV ROADWAY-AUTOMOBILES EXCLUDED
ROADWAY LINK ADDED
ROADWAY LINK REMOVED

Figure 2.2.36

Alternative 1 - Full-Build - High HOV/Transit Use

Figure 2.2.26 illustrates an early "full-build" local roadway network configuration. Alternative 1 assumes the construction of:

- Farnsworth Street between Old Northern Avenue and New Northern Avenue;
- Pittsburgh Street between Old Northern Avenue and New Northern Avenue;
- Calvin Street Extension between Stillings Street and B Street;
- Congress Street Extension between (Sharp) and B Streets;
- Relocated E Street between Fargo and Summer Streets;
- A new First Street (or Cypher Street)/West Second Street bridge to replace the Second Street bridge in South Boston. A connection between A Street and the South Boston Bypass Road would also be provided. The intersection of A Street and West Second Street would be reconfigured to ease truck turning movements (These proposed new roadway facilities would allow access to the Bypass Road for Gillette and Post Office trucks as well as provide access to the area south of Summer Street in the long term after the South Boston Bypass Road access from Dorchester Avenue is discontinued.);
- Pittsburgh Street is assumed to be reconstructed with new sidewalks and made one-way northbound with a typical two-lane cross-section;

- Sleeper Street is assumed to be reconstructed with new sidewalks and made one-way southbound with a typical two-lane cross-section;

- Old Northern Avenue is assumed to be reconstructed and made one-way westbound between B Street and the West Service Road, but remaining two-way between the West Service Road and Sleeper Street with a four-lane cross-section;

- A new 'F' ramp connection to B Street; and

- D Street connected between Summer Street and Northern Avenue with left turns prohibited at D Street and the Massport Haul Road.

Alternative 1 does not include either the "AA" ramp (BCA's optional eastbound/northbound truck/bus ramp on Massport property) or the "GD" ramp. Alternative 1 assumes that no general traffic will be allowed on either the Massport Haul Road or the South Boston Bypass Road, just trucks, buses and vans. Like Alternative 0, the peak hour transit/walk/high occupancy vehicle (HOV) modal share is assumed to be about 55% north of Summer Street and 34% south of Summer Street. To simulate the exclusive bus/truck/van use of the Massport Haul Road and the South Boston Bypass Road, capacities on these facilities were approximated to the equivalent level of truck/bus/van utilization on the basis of available truck studies and bus projections from points south of the Fort Point Channel (including the recent FST count program).

Alternative 1 also assumes that additional neighborhood traffic controls beyond those discussed in the South Boston Neighborhood Transportation Study cited previously will be implemented. Specifically, the use of reversed one-way streets on C, D, and E Streets have been assumed for modelling purposes as a way to discourage truck and automobile intrusions into South Boston residential neighborhoods. This set of measures represent but one of many possible neighborhood traffic control options available to the South Boston residential community. It is assumed that the specific neighborhood traffic control devices to be implemented should be worked out with the residential and business community of South Boston in a manner that will have the least impact on South Boston residential community access to the Fort Point Channel study area, but will be most effective in deterring regional traffic from using local residential streets to bypass congestion on the regional highway network.

Alternative 1A Full-Build - Low HOV/Transit Use

Alternative 1A (see Figure 2.2.27) assumes a less than optimal transit mode share in the Fort Point Channel/South Boston study area. It assumes the identical roadway system as Alternative 1. The public transit share is assumed to be 25 percent north of Summer Street and 17 percent south of Summer Street in the year 2010. This alternative was run to test the traffic impacts associated with a less intensive improvement program for public transit. It is important to note that even achieving a 25 percent modal share will require a major commitment to public transportation in the Fort Point Channel/South Boston area.

Alternative 1B - Full-Build with Massport Haul Road Open to General Traffic

This would be the same as Alternative 1, except that the Massport Haul Road is assumed to be open to general traffic; however, the South Boston Bypass Road is assumed to be open only to trucks, buses, and vanpools (i.e., no taxis or carpools). Presently, the Massport Haul Road is open to general traffic; Massport has not expressed a desire to change this policy in the future. Figure 2.2.28 illustrates Alternative 1B.

Alternative 1C - Full-Build without D Street between Summer Street and Massport Haul Road

This would be the same as Alternative 1, except that D Street would not be connected between Summer Street and the Massport Haul Road. In addition, the one-way street neighborhood traffic controls associated with Alternative 1 (or some variation thereof) would not be implemented. A New Ramp Street parallel to Congress Street between the Massport Haul Road and Congress Street is assumed under this alternative. The traffic forecasts associated with Alternatives 1C and 1D were run to determine the relative the value of additional neighborhood traffic control devices and the proposed D Street connection between Summer Street and Northern Avenue. Figure 2.2.29 illustrates Alternative 1C.

Alternative 1D - Full-Build without new South Boston Neighborhood Traffic Controls

This would be the same as Alternative 1, but existing South Boston

neighborhood circulation patterns would be retained (with the exception of proposed modifications along Day Boulevard recommended in the BTD's South Boston Neighborhood Transportation Study; these neighborhood traffic controls are assumed in all of the alternatives examined). This alternative tests the effectiveness of the additional neighborhood traffic controls in the northern part of the South Boston residential community. Figure 2.2.30 illustrates Alternative 1D.

Alternative 1E - Full-Build without Congress Street or Calvin Street Extensions

This would be the same as Alternative 1, except the piece of the proposed "Congress Street Extension" between the Seaport Access Road off ramp and B Street as well as the "Calvin Street Extension" between B Street and the Seaport Access Road Off-ramp Extension would be eliminated. The 'F' Ramp (i.e., southbound Seaport Access Raod Off-ramp) is located where the State proposes it, at the northbound Seaport Access Road Off-ramp location. This alternative was used to test the transportation value of the proposed Congress Street/Calvin Street extensions as well as the transportation value of aligning the southbound Seaport Access Road off-ramp at B Street. Figure 2.2.31 illustrates Alternative 1E.

Alternative 1F - Full-Build with South Boston Bypass and Massport Haul Roads open to General HOV traffic

This is the same as Alternative 1, except the Massport Haul Road and South Boston Bypass Road and their connections to local streets are assumed as open to general traffic. This alternative allowed us to assess the

relative merits associated with reserving the Massport Haul Road/South Boston Bypass Road for exclusive truck/bus/van use vs. diverting some displaced D Street and L Street traffic onto it. Figure 2.2.32 illustrates Alternative 1F.

Alternative 1G - Full-Build with Dorchester Avenue Open to General Traffic

This is the same as Alternative 1, except that Dorchester Avenue is assumed to be reopened to general traffic, at least during the peak traffic periods. This Alternative was tested to respond to questions concerning the impact of a possible Dorchester Avenue reopening on peak period traffic volumes in the Fort Point Channel/South Boston roadway network. Since Dorchester Avenue is outside of our study area, its reopening will not be assumed in a "consensus" alternative for our study area. Figure 2.2.33 illustrates Alternative 1G.

Alternative 1H - Full-Build with Exclusive Truck/HOV (So-called "AA") Northbound Ramp

This is the same as Alternative 1, except that a proposed "AA" ramp is assumed to replace an alternative connection between the Massport Haul Road and B Street. Thus it was possible to evaluate the local street transportation impacts associated with such a proposed ramp connection. Figure 2.2.34 illustrates Alternative 1H.

Alternative 1I - Full-Build with Relocated Combined HOV/general Traffic Southwestbound (So-called "G/D") Ramp

This is the same as Alternative 1, except that a proposed "G/D" ramp

serving south and westbound HOV and general traffic is grade separated from Congress Street. This alternative was developed to assess the local street traffic impacts associated with such a ramp. Figure 2.2.35 illustrates Alternative 1I.

Alternative 1HI- Full-Build with both "AA" and "G/D" Ramps

This is the same as Alternative 1, except that the proposed "G/D" and "AA" ramps are both assumed. This alternative represents the most local roadway and regional ramp system modifications. Figure 2.2.36 illustrates Alternative 1HI.

COMPARISONS OF TRAFFIC FORECASTS

To make comparisons between the alternative forecasts, it was necessary to review an array of cordon traffic volume changes associated with each of the alternatives which were developed. Morning peak hour comparisons were made comparing all alternatives; afternoon peak hour comparisons were made between Alternative 0 and Alternative 1HI, which has the most local roadway changes. The relative impacts between the alternatives during the morning peak hour are expected to hold true, in an opposite manner, during the afternoon peak hour. The sensitivity of making changes to the local roadway system on following three separate external cordons were assessed:

- The Northern Avenue, Congress Street, and Summer Street bridges;
- A cordon comprised of the inbound and outbound ramps into and out of the Fort Point Channel area associated with the Seaport Access Road;

- A cordon entailing the streets and roadways providing access to the Fort Point Channel study area (A, C, D, E, Pappas Way, and L Streets) from the South Boston residential community.

Tables 2.2.7 through 2.2.10 provide summary comparisons of cordon traffic volumes projected for the year 2010 AM peak hour for all alternatives. Volumes for Alternative 0 are provided; changes in volumes between Alternative 0 and the other local roadway alternatives are highlighted to compare the impacts associated with each of the alternatives. Table 2.2.11 provides a summary comparison of projected cordon traffic volumes for the year 2010 PM peak hour for Alternatives 0 and 1HI.

In addition to the cordon traffic volume review, which is included in this report for all alternatives, traffic operational impacts associated with the local street alternatives were also plotted and reviewed. Traffic volume and congested roadway link comparisons between Alternative 0 and Alternative 1HI, which has the most local roadway modifications, are provided in this report. Figures 2.2.37 - 2.2.40 illustrate the projected year 2010 AM and PM peak hour volumes as well as the AM and PM peak hour levels of service on the roadway network with Alternative 1HI. Refer back to Figures 2.2.22 -2.2.25 for the comparable Alternative 0 information.

Table 2.2.12 provides an overview comparison of AM and PM peak hour entering total vehicle and truck volumes in 1988 vs. projected AM and PM peak hour total entering vehicle and truck volumes at the Fort Point Channel/South Boston study area cordon with Alternative 1HI in the year 2010. Table 2.2.13 provides an overview comparison of vehicle-miles of congestion associated with 1987 traffic conditions vs. vehicle-miles of congestion projected for the year 2010 with Alternative 0 and Alternative 1HI.

Table 2.2.7

FORT POINT CHANNEL/SOUTH BOSTON ROADWAY IMPROVEMENTS STUDY

COMPARISON OF 2010 AM PEAK HOUR VOLUME PROJECTIONS

FORT POINT CHANNEL BRIDGES

	Northern Avenue		Congress Street		Summer Street		TOTAL	
ALTERNATIVE	IN	OUT	IN	OUT	IN	OUT	IN	OUT
0	1809	2134	604	224	2222	999	4635	3357
	CHANGE FROM ALT. 0							
1	-9	- 11	+ 32	+ 47	-8	-198	+ 19	-162
	-.5%	-.5%	5.2%	21.9%	-.4%	-19.0%	0.4%	- 4.7%
1A	+519	+ 84	+175	+ 70	+557	-150	+1251	+ 4
	28.9%	3.9%	28.6%	32.6%	25.1%	-14.4%	27.0%	0.1%
1B	- 31	+ 11	+ 27	+ 11	+ 18	-183	+ 14	-161
	- 1.7%	0.5%	4.4%	5.1%	0.8%	-17.5%	0.3%	- 4.7%
1C	- 49	- 96	+ 22	+ 39	- 42	- 54	- 71	- 111
	- 2.7%	- 4.4%	3.6%	18.1%	- 1.9%	- 5.2%	- 1.5%	- 3.2%
1D	- 44	- 32	+ 42	+ 48	- 53	- 74	- 57	- 58
	- 2.5%	- 1.5%	6.7%	22.3%	- 2.4%	- 7.1%	-1.2%	- 1.7%
1E	+102	-119	- 67	+ 6	- 2	-111	+ 33	-224
	5.7%	-5.5%	-10.9%	2.8%	- 0.1%	-10.6%	0.7%	- 6.5%
1F	- 49	+ 11	+ 13	+ 49	+ 5	-165	- 31	-105
	-2.7%	0.5%	2.1%	22.8%	0.2%	-15.8%	-0.7%	- 3%
1G	- 11	0	+ 58	+ 33	+120	-283	+167	-250
	-0.6%	0	9.5%	15.3%	5.4%	-27.1%	3.6%	- 7.3
1H	- 5	+ 1	+ 30	+ 42	- 11	-210	+ 14	-167
	-0.3%	0.1%	4.9%	19.5%	- 0.5%	-20.1%	0.3%	- 4.8%
1I	- 9	- 11	+ 40	+ 48	- 16	-193	+ 15	-156
	-0.5%	- 0.5%	6.5%	22.3%	- 0.7%	-18.5%	0.3%	- 4.6%
1 HI	- 26	- 43	+ 37	+ 34	- 15	- 54	- 4	- 63
	- 1.4%	- 2.0%	6.1%	15.2%	- 0.7%	- 5.4%	- 0.1%	- 1.9%

Table 2.2.8

FORT POINT CHANNEL/SOUTH BOSTON ROADWAY IMPROVEMENTS STUDY

COMPARISON OF 2010 AM PEAK HOUR VOLUME PROJECTIONS

SEAPORT ACCESS ROAD RAMPS

	Eastbound Ramps		Westbound Ramps		TOTAL	
ALTERNATIVE	IN	OUT	IN	OUT	IN	OUT
0	3651	538	838	707	4489	1245
	CHANGE FROM ALT. 0					
1	+ 74 27.2%	- 29 - 5.4%	- 23 - 2.7%	+ 66 9.3%	+ 51 1.1%	+ 37 3.0%
1A	+1007 27.2%	+ 64 12.8%	+180 21.5%	- 10 -1.4%	+1187 26.2%	+ 59 4.7%
1B	+ 86 2.3%	- 25 - 4.6%	- 22 - 2.6%	+ 78 11.0%	+ 64 1.4%	+ 53 4.3%
1C	- 97 -2.7%	+ 24 4.5%	- 20 - 2.6%	- 20 - 2.8%	-119 - 2.6%	+ 4 0.3%
1D	- 14 - 0.4%	+ 83 15.4%	+ 4 0.5%	+ 41 5.8%	- 10 - 0.2%	+124 10.0%
1E	-159 - 4.3%	- 21 - 3.9%	- 24 - 2.8%	-156 -22.1%	-183 - 4.0%	-177 -14.2%
1F	- 23 - 0.6%	- 20 - 3.7%	- 32 - 3.8%	+ 26 3.7%	- 55 - 1.2%	+ 6 0.5%
1G	+ 72 1.9%	- 8 - 1.5%	- 21 - 2.5%	+ 64 9.1%	+ 51 1.1%	+ 56 4.5%
1H	+117 3.2%	- 86 -16.0%	+ 63 7.5%	+ 65 9.2%	+180 4.0%	- 21 - 1.7%
1I	+ 67 1.8%	- 26 - 4.8%	- 23 - 7.7%	+ 32 4.5%	+ 44 2.0%	+ 6 0.5%
1HI	+234 6.0%	+ 6 1.1%	- 23 - 2.7%	+ 74 10.5%	+211 4.7%	+ 80 6.4%

Table 2.2.9

FORT POINT CHANNEL/SOUTH BOSTON ROADWAY IMPROVEMENTS STUDY

COMPARISON OF 2010 AM PEAK HOUR VOLUME PROJECTIONS

SOUTH BOSTON RESIDENTIAL AREA ACCESS ROADS

	Bypass Road		A-L Streets & Pappas Way		TOTAL	
ALTERNATIVE	IN	OUT	IN	OUT	IN	OUT
0	56	0	3542	763	3598	762
			CHANGE FROM ALT. 0			
1	+ 202	+ 3	-305 -9.6%	- 64 - 8.1%	-103 - 3.2%	- 61 - 7.7%
1A	+ 293	+ 3	+196 6.2%	- 4 - 0.5%	+489 15.0%	- 1 - 0.1%
1B	+ 202	+ 3	-255 - 8.0%	- 63 - 8.0%	- 53 - 1.6%	- 60 - 7.6%
1C	+ 90	+ 3	+204 6.4%	+ 50 6.3%	+294 9.0%	+ 53 6.7%
1D	+ 129	+ 2	+229 7.2%	+ 70 8.9%	+358 11.0%	+ 72 9.1%
1E	+ 162	+ 6	-273 - 8.6%	- 31 - 3.9%	-111 - 3.4%	- 25 - 3.2%
1F	+ 601	+ 18	-392 -12.4%	+ 59 7.5%	+209 6.4%	+ 77 9.8%
1G	+ 160	+ 3	-472 -15.0%	- 53 - 6.7%	-312 - 9.6%	- 50 - 6.3%
1H	+ 194	+ 3	-312 - 9.8%	- 59 - 7.5%	-118 - 3.6%	- 56 - 7.1%
1I	+ 198	+ 3	-309 - 9.8%	- 53 - 6.7%	-111 - 3.4%	- 50 - 6.3%
1HI	+ 214	+ 3	-456 -12.9%	- 43 - 5.6%	-242 - 6.7%	- 40 - 5.2%

Table 2.2.10

FORT POINT CHANNEL/SOUTH BOSTON ROADWAY IMPROVEMENTS STUDY

COMPARISON OF 2010 AM PEAK HOUR VOLUME PROJECTIONS

ALTERNATIVE	Massport Haul Road (between C and D Streets) TOTAL
0	21
1	69
1A	120
1B	1000
1C	132
1D	36
1E	82
1F	1261
1G	38
1H	54
1I	68
1HI	39

Table 2.2.11

FORT POINT CHANNEL/SOUTH BOSTON ROADWAY IMPROVEMENTS STUDY

COMPARISON OF 2010 PM PEAK HOUR VOLUME PROJECTIONS

	Northern Avenue		Congress Street		Summer Street		TOTAL	
ALTERNATIVE	IN	OUT	IN	OUT	IN	OUT	IN	OUT
0	1597	3230	570	712	1475	1472	3642	5414
	CHANGE FROM ALT. 0							
1HI	- 41	-232	+ 22	+ 79	0	+ 4	- 19	-109
	- 2.6%	-7.2%	+3.9%	-11.1%	0	3.0%	- 0.5%	-2.0%

	Eastbound Ramps		Westbound Ramps		TOTAL	
ALTERNATIVE	IN	OUT	IN	OUT	IN	OUT
0	1214	1618	870	2466	2084	4084
	CHANGE FROM ALT. 0					
1HI	+158	+494	+ 95	+595	+253	+1089
	13.0%	30.5%	10.9%	24.1%	12.1%	26.7%

	Bypass Road		A-L Streets & Pappas Way		TOTAL	
ALTERNATIVE	IN	OUT	IN	OUT	IN	OUT
0	0	260	992	4022	992	4282
			CHANGE FROM ALT. 0			
1HI	16	373	+ 33	- 806	+ 49	- 693
			3.3%	-20.0%	+ 4.9%	-16.2%

	Massport Haul Road
ALTERNATIVE	TOTAL
0	421
1HI	665

Table 2.2.12

SOUTH BOSTON/FORT POINT CHANNEL AREA

PROJECTED ALTERNATIVE 1HI 2010 AM AND PM PEAK HOUR

CORDON TRAFFIC VOLUMES

VS. 1988 EXISTING TRAFFIC VOLUMES

	1988 AM	1988 PM	2010 AM*	2010 PM*
Total Vehicles Entering	5,390	2,930	12,700	7,000
Total Vehicles Exiting	2,820	5,330	5,350	14,050
Total Vehicles	8,210	8,260	18,065	21,050
Total Entering Trucks	425	200	620**	290**
Total Exiting Trucks	335	155	490**	230**

* Source: Cambridge Systematics.

** Source: Fay, Spofford & Thorndike, Inc.

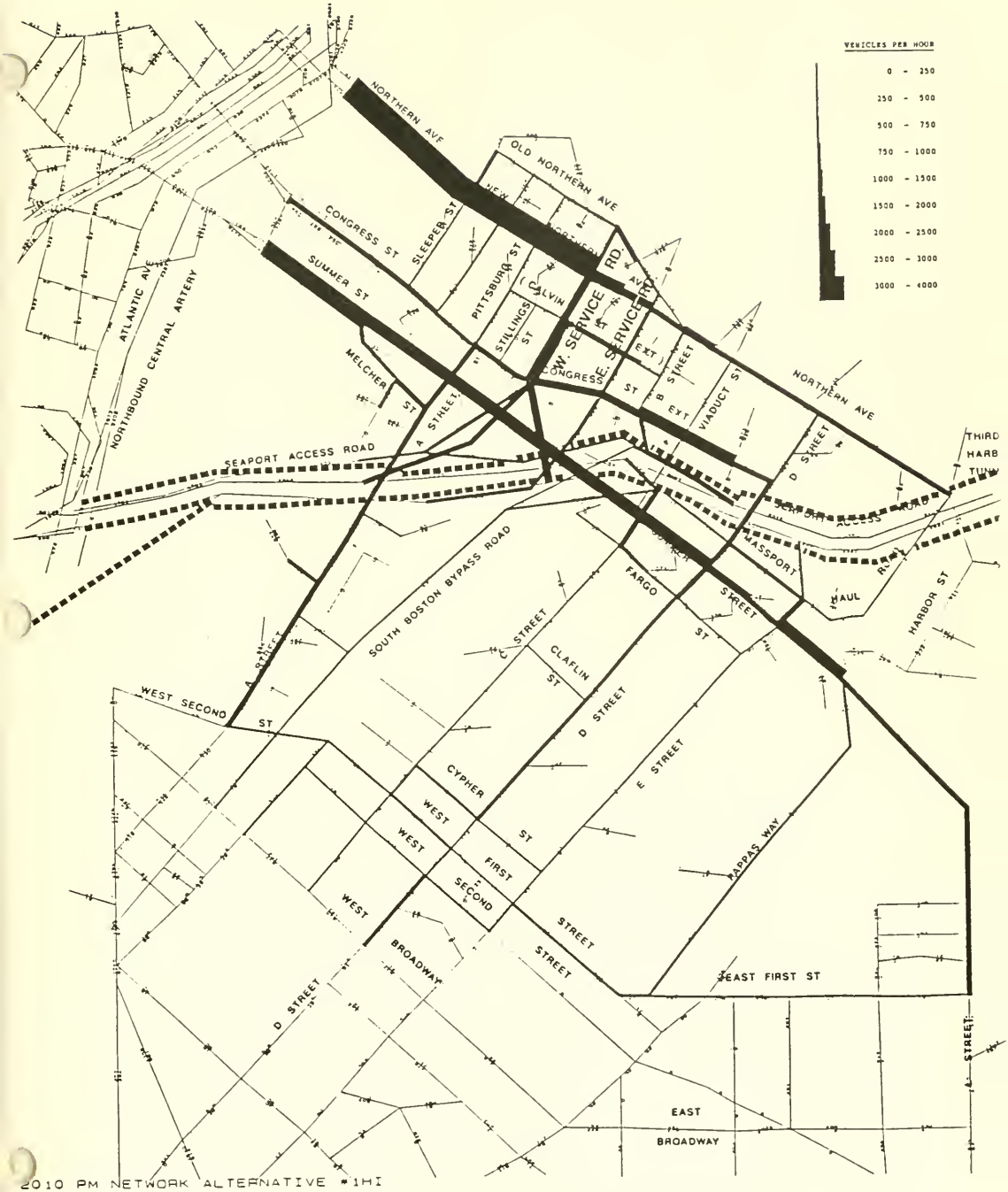
Table 2.2.13

SOUTH BOSTON/FORT POINT CHANNEL STUDY AREA

COMPARISON OF ESTIMATED LEVEL OF SERVICE "F" VEHICLE-MILES*

ALTERNATIVE	LOS "F" VEHICLE-MILES	
	AM PEAK HOUR	PM PEAK HOUR
1988 Existing Conditions	250	700
Alternative 0 (Year 2010)	1900	3150
Alternative 1HI (Year 2010)	1450	1900

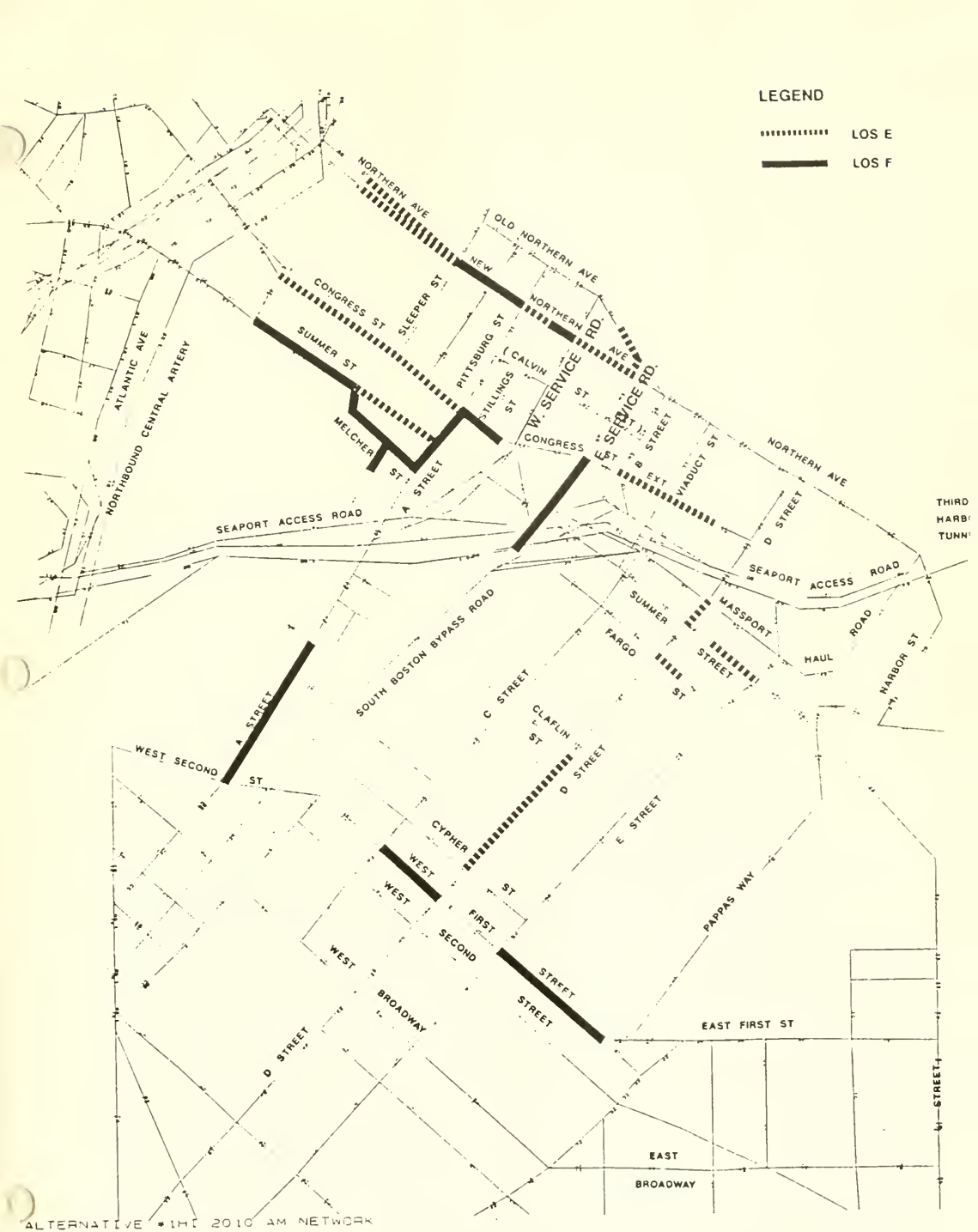
* Source: Traffic forecasts by Cambridge Systematics, Inc. A vehicle-mile of congestion occurs when one vehicle travels one mile over a roadway which is operating under stop-and-go conditions -- e.g., 10 vehicles travelling a half-mile on a congested roadway would entail 5 vehicle-miles of congestion.



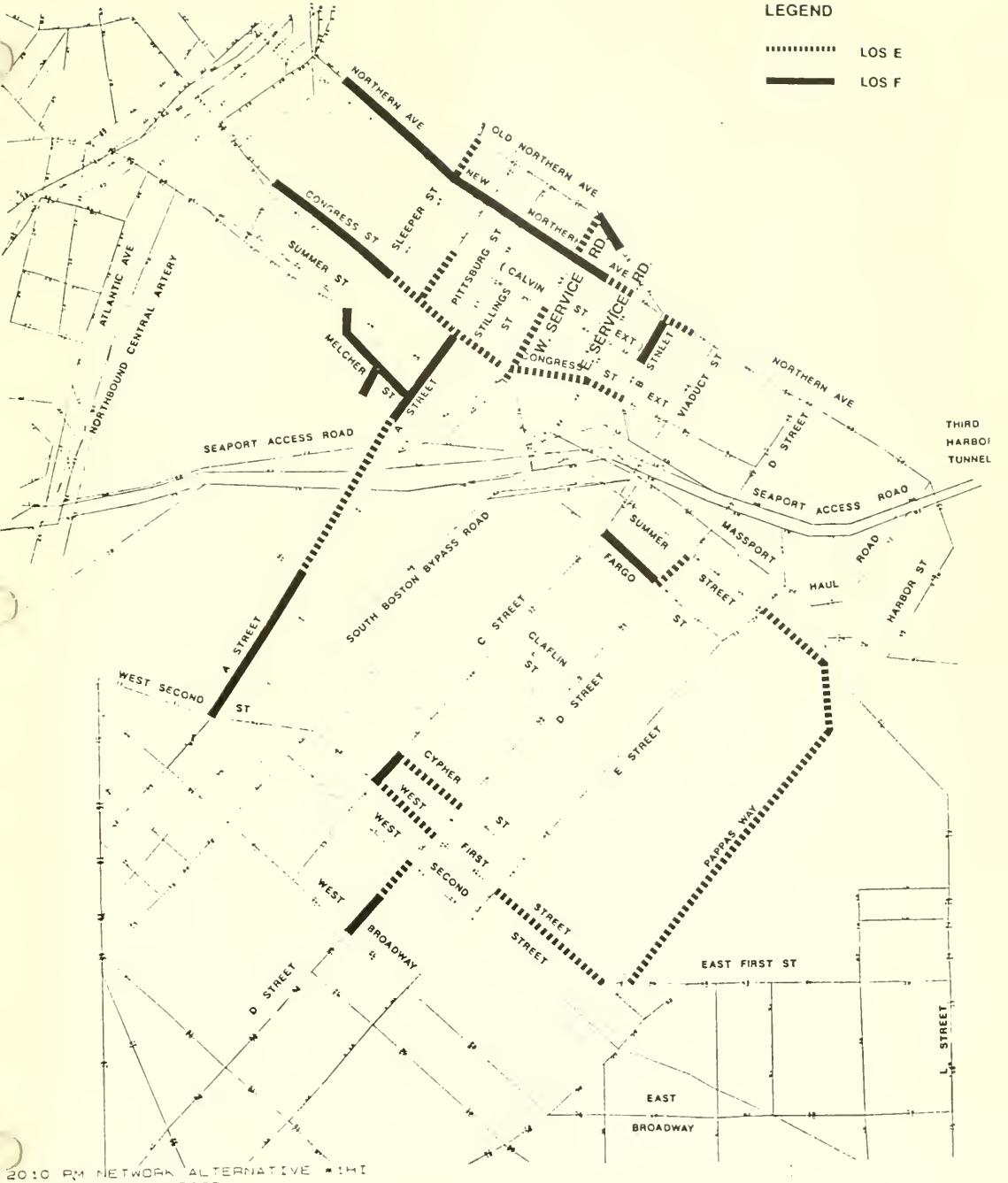
2010 PM NETWORK ALTERNATIVE *1HI
VOLUMES REPORTED
FEBRUARY 17 1989 --- SOO

17FE889 12.11.38

1HI-FULL-BUILD WITH BOTH "AA" AND "G/D" RAMPS **Figure 2.2.38**



1HI-FULL-BUILD WITH BOTH "AA" AND "G/D" RAMPS **Figure 2.2.39**



2010 PM NETWORK ALTERNATIVE = 1HI
V/C RATIOS REPORTED
FEBRUARY 17, 1989 --- SDD

17FEB89 12 12 29

1HI-FULL-BUILD WITH BOTH "AA" AND "G/D" RAMPS **Figure 2.2.40**

Truck Access Projections

The forecast of trucking activity is an important aspect of the PWED study traffic projections. A preliminary forecast of the overall magnitude of trucking activity was made for the land uses associated with the Fort Point Channel/South Boston study area. Five sources of information were used to develop these forecasts and distribution pattern:

- "Seaport Access System" report prepared by FST/WFEM for the Boston Redevelopment Authority and Massport, June, 1980.

- "Fan Pier/Pier 4 South Boston Truck Access Study" report prepared by Vanasse Hangen Brustlin, Inc. for the Boston Shipping Association, December, 1987.

- "Transportation and Land Development", Institute of Transportation Engineers, December, 1988.

- FST Memorandum, October 7, 1988 "Land Use Data and Discussion of Potential Modal Splits in the South Boston Fort Point Channel Study Area"

- September, 1988 PWED Traffic Count Program.

In addition, a recent EDIC report entitled Industry in South Boston Industrial Area (January, 1989) was reviewed and found to be basically consistent with the results discussed in this study. The latter three sources provide the primary basis for truck volume projections. The other two

documents assisted in identifying the tentative distribution of truck trips outside the South Boston/Fort Point Channel study area. The recent BSC/CS South Boston Truck Study combined with the BCA/EDIC truck routing study was used as the basis for distributing truck trips to the South Boston/Fort Point Channel study area.

The recent count program conducted in the Fort Point Channel/South Boston study area was found to be highly consistent with information generated during the 1980 Seaport Access System study. At the present time, it is estimated that the study area generates 9,720 truck trips each day at a cordon bounded by the Fort Point Channel and First Street in South Boston. It is estimated an additional 1,520 trucks pass through the study area. Based on the projected growth in office space, retail space, cultural, industrial, and residential development in the study area (supplied by CS) it is estimated that the study area will generate the following increases in truck trips:

- Office/Cultural: +9,997,214 sq. ft. @ 4.22 truck trips/ 10,000 sq. ft.* = 4,219 additional weekday truck trips;

- Retail: +636,959 sq. ft. @ 5.0 truck trips/ 10,000 sq. ft.* = 318 additional weekday trips;

- Industrial: +434,378 sq. ft. @ 5.6 truck trips/ 10,000 sq. ft.** = 243 additional weekday trips; and

---

* Transportation and Land Development, ITE, 1988, Table 7-8, P. 204

** Based on the estimated proportion of the September, 1988 count data attributable to the industrial land uses in the South Boston/Fort Point Channel area.

- Residential: +3,139,000 sq. ft. @ 1.0 truck trips/ 10,000 sq. ft.* = 314 additional weekday truck trips.

In total, it is estimated that the new development will add about 5,100 truck trips per day for a daily total of about 14,850 truck trips excluding truck trips which pass through the study area. It is estimated that these trips will have the same distribution desire lines (but not the same internal routings) as general traffic and truck traffic are distributing today. Normalizing the results of the FST count program and Vanasse Hangen Brustlin, Inc. study, it is estimated that the additional daily truck traffic will be oriented as follows:

- Southerly Orientation (towards the Southeast Expressway) = 36 %
- Easterly Orientation (Third Harbor Tunnel) = 19 %**
- Westerly Orientation (Seaport Access Road/I-93) = 34 %**

---

* Assumes that each 1,000± sq. ft. dwelling unit generates approximately 1 truck trip every 2 weeks (i.e., garbage pick-up, deliveries, etc.).

** Assumes truck traffic is distributed proportionally to projected traffic volumes for the three major northerly oriented regional routes -- I-93, Route 1, and Route 1A.

- Westerly Orientation (downtown Boston) = 11 %

This study area truck distribution pattern is similar to how truck traffic was found to be distributed in 1988. Figure 2.2.41 shows the projected truck distribution pattern at the cordon with Alternative 1HI. Figures 2.2.42-2.2.44 illustrate projected AM and PM peak hour and average weekday truck volumes at the cordon and at the Seaport Access Road ramps. While these volumes have not been rounded off, they should be assumed as being approximate. Furthermore, it is important to note that the volumes on the Northern Avenue, Congress Street, and Summer Street bridges only include those trucks which have destinations in the downtown core area. Trucks with further destinations are assumed to be using the regional highway system.

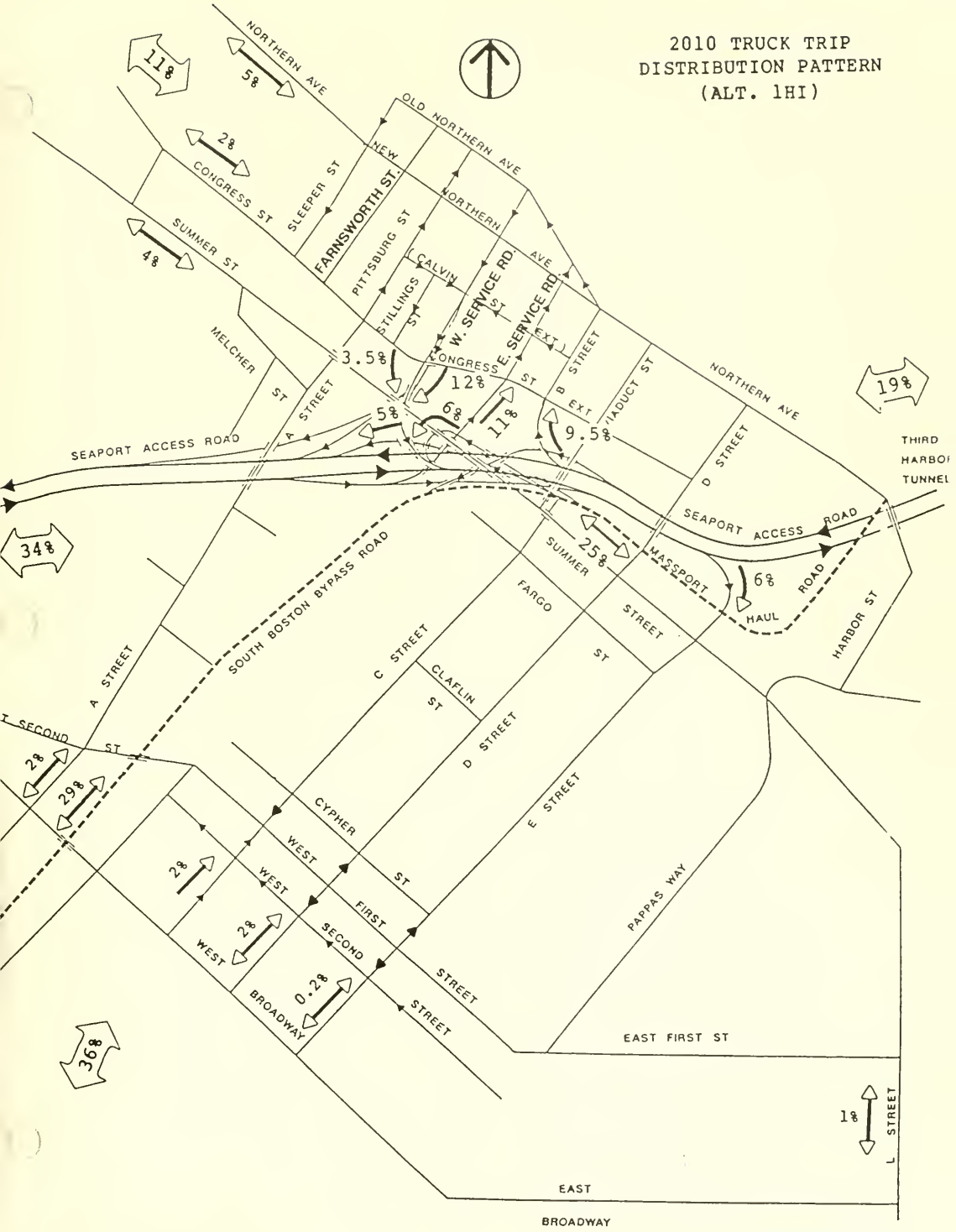

2010 TRUCK TRIP
DISTRIBUTION PATTERN
(ALT. 1HI)
NORTHERN AVE
OLD NORTHERN AVE
NEW NORTHERN AVE
CONGRESS ST
SLEEPER ST
FARNSWORTH ST.
SUMMER ST
PITTSBURG ST
STILLINGS ST
CALVIN ST
W. SERVICE RD.
E. SERVICE RD.
MELCHER ST
A STREET
CONGRESS ST
B STREET EXT
VIADUCT ST
D STREET
SEAPORT ACCESS ROAD
THIRD HARBOR TUNNEL
SOUTH BOSTON BYPASS ROAD
SUMMER ST
FARGO ST
MASSPORT HAUL ROAD
HARBOR ST
C STREET
CLAFLIN ST
D STREET
E STREET
PAPPAS WAY
SECOND ST
CYPHER ST
WEST FIRST ST
WEST SECOND ST
BROADWAY
EAST FIRST ST
L STREET
EAST BROADWAY
11%
5%
2%
4%
3.5%
12%
5%
6%
11%
9.5%
19%
34%
25%
6%
2%
29%
2%
2%
2%
0.2%
36%
1%

Figure 2.2.41

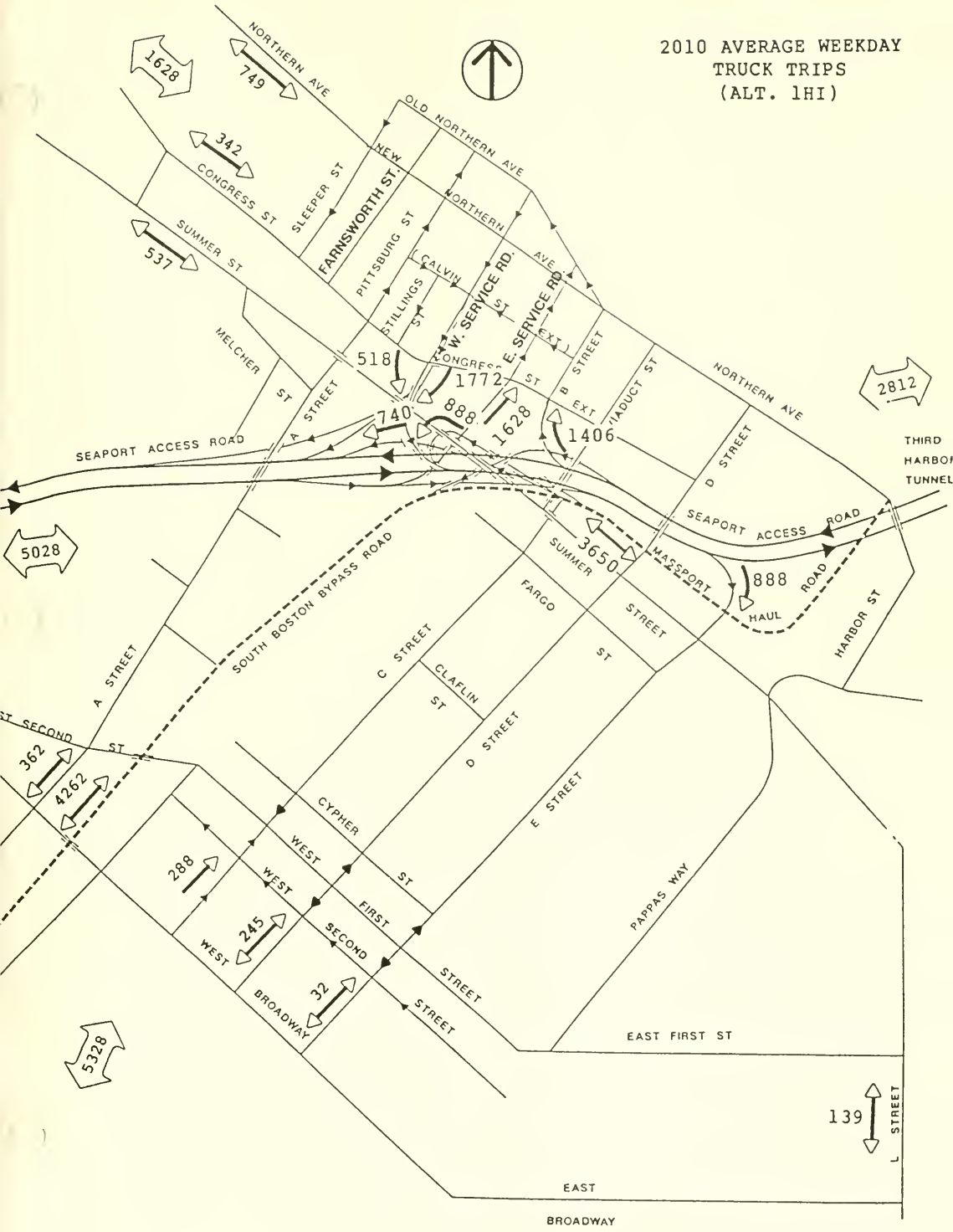

2010 AVERAGE WEEKDAY
TRUCK TRIPS
(ALT. 1HI)
NORTHERN AVE
OLD NORTHERN AVE
CONGRESS ST
SLEEPER ST
FARNSWORTH ST.
PITTSBURG ST
STILLINGS ST
CALVIN ST
W. SERVICE RD.
E. SERVICE RD.
B STREET EXT
SUMMER ST
MELCHER ST
A STREET
SEAPORT ACCESS ROAD
SOUTH BOSTON BYPASS ROAD
C STREET
CLAFLIN ST
D STREET
FARGO ST
SUMMER STREET
HAUL ROAD
HARBOR ST
THIRD HARBOR TUNNEL
VIADUCT ST
E STREET
PAPPAS WAY
CYPHER ST
WEST FIRST ST
WEST SECOND ST
WEST BROADWAY
EAST FIRST ST
EAST BROADWAY
L STREET
1628
749
342
537
518
1772
740
888
1628
1406
2812
5028
3650
888
362
4262
288
245
32
5328
139

Figure 2.2.42

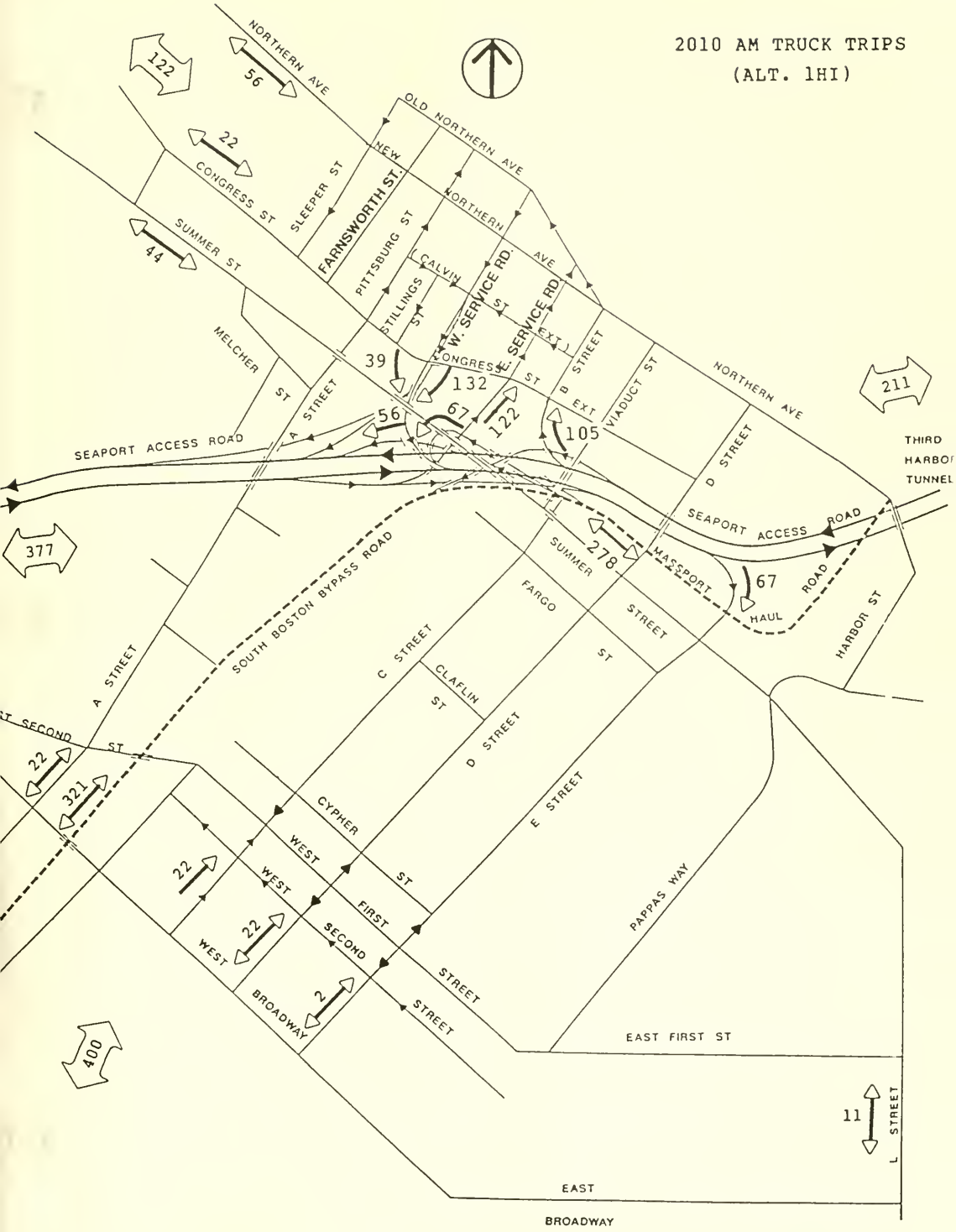

2010 AM TRUCK TRIPS
(ALT. 1HI)
NORTHERN AVE
OLD NORTHERN AVE
NEW
FARNSWORTH ST.
CONGRESS ST
SLEEPER ST
SUMMER ST
PITTSBURG ST
STILLINGS ST
CALVIN ST
W. SERVICE RD.
E. SERVICE RD.
EXT.
CONGRESS ST
B STREET
VIADUCT ST
MELCHER ST
A STREET
SEAPORT ACCESS ROAD
D STREET
THIRD HARBOR TUNNEL
SOUTH BOSTON BYPASS ROAD
SUMMER
FARGO
STREET
C STREET
CLAFLIN ST
HARBOR ST
HAUL ROAD
SECOND ST
CYPHER ST
WEST FIRST STREET
WEST SECOND STREET
BROADWAY
E STREET
PAPPAS WAY
EAST FIRST ST
L STREET
EAST BROADWAY
122
56
22
44
39
132
67
122
105
56
211
377
278
67
321
22
22
22
2
400
11

Figure 2.2.43

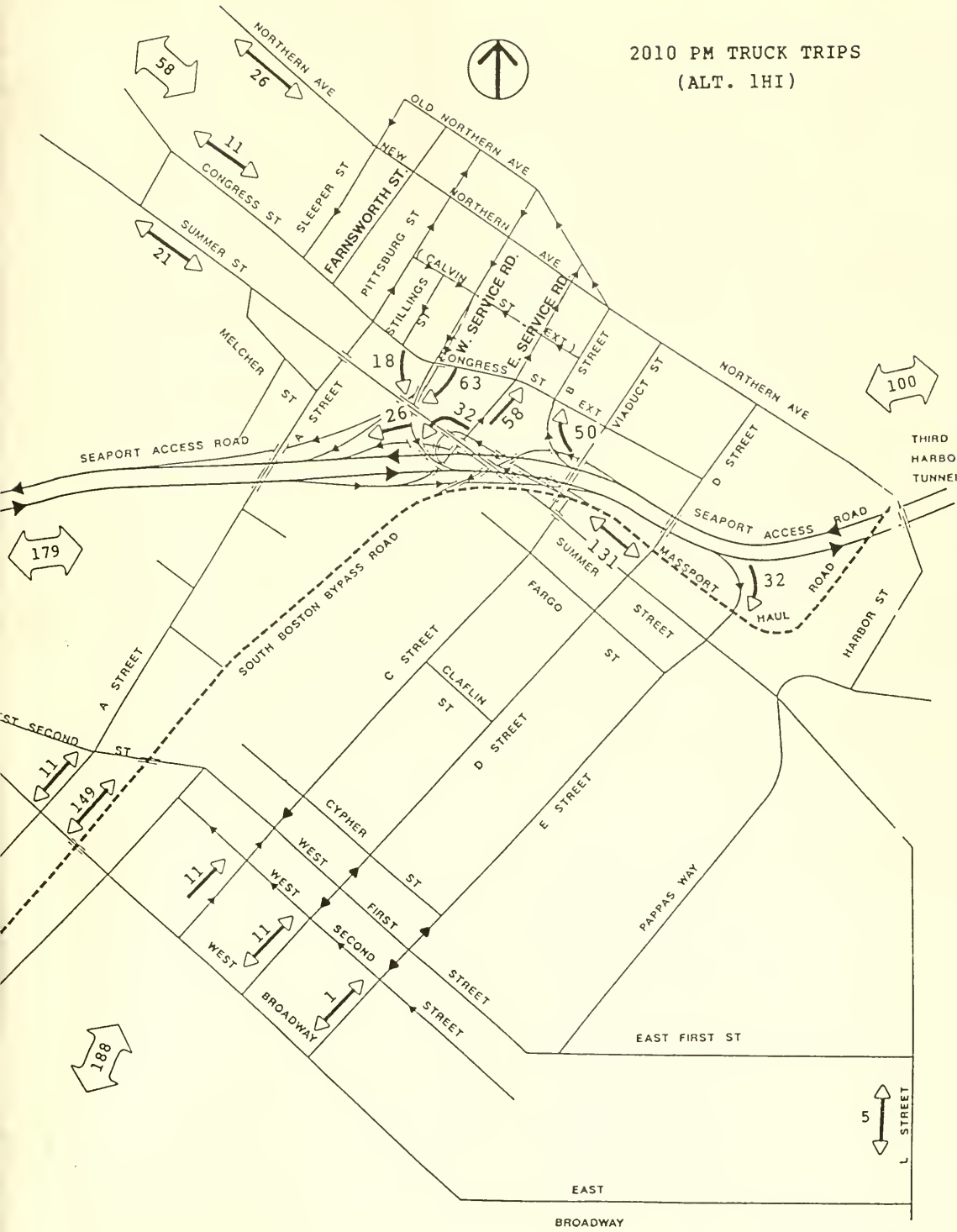

2010 PM TRUCK TRIPS
(ALT. 1HI)
NORTHERN AVE
OLD NORTHERN AVE
NEW NORTHERN AVE
CONGRESS ST
SLEEPER ST
FARNSWORTH ST.
PITTSBURG ST
STILLINGS ST
CALVIN ST
W. SERVICE RD.
E. SERVICE RD.
SUMMER ST
MELCHER ST
A STREET
CONGRESS ST
B STREET EXT
VIADUCT ST
D STREET
SEAPORT ACCESS ROAD
THIRD HARBOR TUNNEL
SOUTH BOSTON BYPASS ROAD
SUMMER
MASSPORT HAUL ROAD
HARBOR ST
C STREET
CLAFLIN ST
FARGO STREET
D STREET
E STREET
PAPPAS WAY
EAST SECOND ST
CYPHER ST
WEST FIRST ST
WEST SECOND STREET
WEST BROADWAY
EAST FIRST ST
L STREET
EAST BROADWAY
58
26
11
21
18
63
32
58
50
100
179
131
32
11
149
11
11
1
188
5

Figure 2.2.44

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